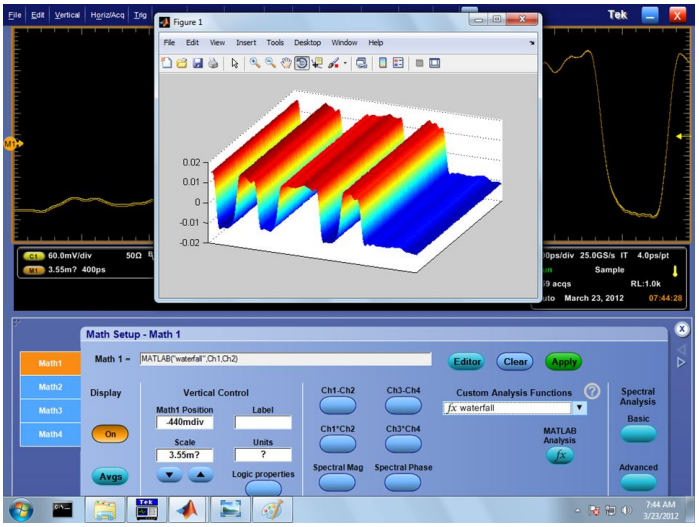
Tektronix Application Developer Toolkit

Integrated user defined measurements and analysis for DPOJET



The Tektronix Application Developer Toolkit (ADK) is a set of tools which allow users to leverage the power of the Tektronix Oscilloscope and measurement system to develop and deploy custom user-defined capabilities.

Key features

- Custom Analysis Interface for use with MATLAB - Integrates custom MATLAB analysis and visualization functions directly into the oscilloscope measurement system
- Create User-Defined DPOJET Measurements - Expands the power of DPOJET by allowing users to add customer defined measurements and algorithms directly into the application
- Create User-Defined Math Functions - Further expands the power of DPOJET by allowing users to create and integrate custom math functions using Visual Studio
- Data Store Public Interface - Provides users direct and efficient access to oscilloscope waveform data for external processing applications
- GUI Toolkit - Provides a library of DPO5K/7K/70K UI elements for the construction of custom applications consistent with the familiar Tektronix user interface
- Tektronix Licensing Interface - Optional access to the Tektronix licensing mechanism for third-party developers
- Application Templates - Visual Studio Templates speed the development and integration of Application Developer Toolkit (ADK) developed measurements

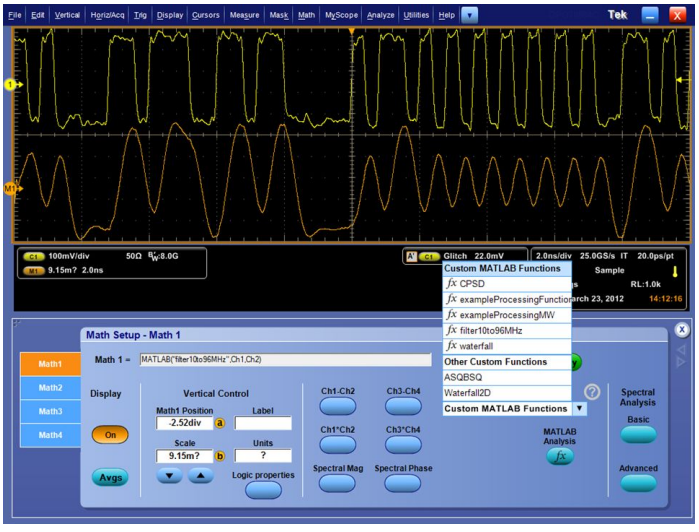
Applications

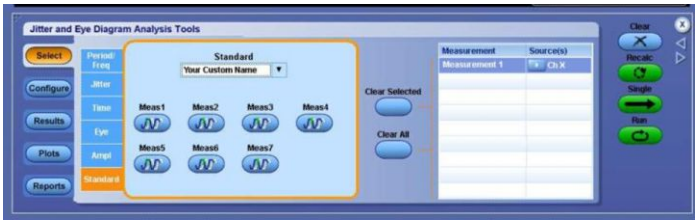
- Customers who wish to integrate their MATLAB analysis directly into the oscilloscope measurement system
- Customers who wish to speed their debug tasks and expand the power of DPOJET through the seamless integration of custom algorithms
- Customers who wish to quickly and efficiently use oscilloscope waveforms for external processing applications
- Third-Party developers who wish to deploy custom debug and analysis tools which are consistent with Tektronix design attributes, are fully integrated into our measurement system, and are licensed as a Tektronix product

Product description

The ADK gives users access to a complete development environment and direct access to underlying waveform data. Along with recognized industry tools (MATLAB, Visual Studio) the ADK capability allows users of the ADK to develop custom debug or analysis applications tailored to meet their specific needs, speeding debug time. The toolset contains:

- Custom analysis interface for use with MATLAB
- DPOJET plug-in for creation of user-defined measurements
- Math plug-in for integration of user-defined math functions
- Data store public interface allowing direct access to oscilloscope waveform data
- GUI toolkit
- Access to the Tektronix licensing system
- Design templates





Custom analysis interface for MATLAB

This high performance interface enables live custom analysis with full integration of MATLAB procedures into the Tektronix oscilloscope. Analysis is performed during the signal acquisition loop and results are returned as a math trace on the instrument, allowing users to rapidly complete advanced analysis and debug tasks. MATLAB procedures hosted on the oscilloscope benefit from a shared memory interface to acquired waveform data, establishing a live data environment that can be fully customized for specific types of analysis. Extensive MATLAB visualization features can also be applied to create specialized data views that are fully synchronized with oscilloscope operation.

User defined DPOJET measurements

The DPOJET measurement plug-in for "DPOJET Jitter and Eye Diagram Analysis" enables users to add a user-defined standard under the DPOJET standard drop-down menu. Additionally, it provides the ability to quickly and seamlessly add new measurements and plots under the user-defined Standard tab. The user-added measurements and plots to DPOJET are treated the same as built-in DPOJET measurements. Since the custom measurements are fully integrated into DPOJET, all advanced DPOJET functionality, such as report generation results statistics and programmatic interface are automatically available for user-added measurements.

Data Store public interface

The Data Store interface provides the ability to efficiently access the oscilloscope waveform data. This interface provides read access for all analog channels and math channels in sample, average, and fast-frame mode. Along with waveform metadata the Data Store interface also provides read access to all digital channels.

With this unique Data Store interface, the user-developed program executes automatically within the oscilloscope acquisition sequence cycle; meaning when new acquisition data is available, the oscilloscope automatically executes the user's program. The oscilloscope acquisition cycle allows the user program to complete the operation on the waveform data before starting with the next acquisition.

Access to TekScope UI widgets and icons

ADK provides access to selective oscilloscope user-interface controls directly in the Visual Studio development environment. Using these user-interface controls developers can develop applications with identical look and feel as the oscilloscope user-interface. ADK also provides seamless integration of the user-interface of user developed applications with the oscilloscope user-interface.

Apps templates for user-defined measurements

Various Visual Studio templates are available as part of ADK. These templates show usage of ADK toolsets and are integrated with the development environment; these templates are expected to serve as a starting point for developers to build applications. Visual Studio project templates are available for the Data Store Interface, DPOJET Measurement plug-in, MATH plug-in, GUI toolkit and License Interface. Templates are supported in both Visual Basic and C# programing languages.

Access Tektronix licensing mechanism

Using the Tektronix license interface, third-party developers may use the oscilloscope license mechanism to optionally license their application. This provides the same functionality that is available for Tektronix-licensed applications.

Ordering information

Recommended accessories

The ADK toolkit is provided free of charge to all DPO/MSO5000, DPO7000, and DPO/MSO/DSA70000 oscilloscope customers who have the following minimum software versions installed:

- TekScope FW version 6.8.1 or above
- DPOJET version 6.1.0 or above
- ADK version 1.2

In order to access the ADK tools the user is required to install one or more of the following applications on their oscilloscope:

- MATLAB version R2011A or above and the instrument control toolbox with any other toolboxes that were used to create the custom MATLAB function (for example, signal processing toolbox)
- Visual studio 2012 express edition or visual studio 2010/2012 Professional / premium / ultimate edition

CE

Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

ASEAN / Australasia (65) 6356 3900
Belgium 00800 2255 4835*
Central East Europe and the Baltics +41 52 675 3777
Finland +41 52 675 3777
Hong Kong 400 820 5835
Japan 81 (3) 6714 3010
Middle East, Asia, and North Africa +41 52 675 3777
People's Republic of China 400 820 5835
Republic of Korea 001 800 8255 2835
Spain 00800 2255 4835*
Taiwan 886 (2) 2722 9622

Austria 00800 2255 4835*
Brazil +55 (11) 3759 7627
Central Europe & Greece +41 52 675 3777
France 00800 2255 4835*
India 000 800 650 1835
Luxembourg +41 52 675 3777
The Netherlands 00800 2255 4835*
Poland +41 52 675 3777
Russia & CIS +7 (495) 6647564
Sweden 00800 2255 4835*
United Kingdom & Ireland 00800 2255 4835*

Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777
Canada 1 800 833 9200
Denmark +45 80 88 1401
Germany 00800 2255 4835*
Italy 00800 2255 4835*
Mexico, Central/South America & Caribbean 52 (55) 56 04 50 90
Norway 800 16098
Portugal 80 08 12370
South Africa +41 52 675 3777
Switzerland 00800 2255 4835*
USA 1 800 833 9200

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

Updated 10 April 2013

For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com.

06 Nov 2013

55W-28194-1

www.tektronix.com

Tektronix®