

Using MATLAB with LeCroy Oscilloscopes

LeCroy provides oscilloscopes that enable engineers and scientists to incorporate live data into their data analysis, algorithms, applications, and designs. MATLAB® extends the functionality of LeCroy oscilloscopes by allowing users to make customized measurements, perform data analysis, and develop automated test systems.

MATLAB Overview

MATLAB is a software environment that has over 1,000,000 users in diverse industries and disciplines, and it is a standard at more than 3500 colleges and universities worldwide. Its interactive software environment and technical computing language enable you to perform computationally intensive tasks faster than with traditional software environments, such as C, C++, and Fortran.

Benefits

- Extend the functionality of LeCroy oscilloscopes by making customized measurements in MATLAB
- Test the functionality of electronic devices by making measurements with LeCroy oscilloscopes and comparing them against known baselines in MATLAB
- Develop a GUI or application that enables users to perform data analysis or testing
- Characterize an electronic device to determine how closely it matches the design
- Verify new algorithms or measurement routines using live data from LeCroy instruments
- Design custom filters in MATLAB and apply them to signals acquired from LeCroy oscilloscopes
- Control and configure multiple instruments in a complex test setup
- Generate reports to share results with colleagues, customers, or management

Using MATLAB with LeCroy Instruments

In the MATLAB environment, you can use MATLAB with Instrument Control Toolbox™ installed directly on an oscilloscope or on a remote computer for the following:

- Configuring and controlling your LeCroy oscilloscope
- Automating measurement collection in a MATLAB application
- Developing a test system consisting of a LeCroy oscilloscope

See www.mathworks.com/lecroymatlab/drivers for the list of MATLAB instrument drivers available for LeCroy oscilloscopes.

In the LeCroy user environment, you can also stream live data by installing MATLAB directly on Windows® based LeCroy oscilloscopes and using the XDEV option to stream data into and out of MATLAB on every trigger event. You can also define a custom math channel using MATLAB and enter your algorithm into the data stream of the scope.



Online Resources

Product Information

- Overview, videos, and examples of using MATLAB with LeCroy oscilloscopes
www.mathworks.com/lecroymatlab/overview
- MATLAB
www.mathworks.com/lecroymatlab
- Instrument Control Toolbox
www.mathworks.com/lecroymatlab/instrument
- LeCroy XDEV option
www.lecroy.com/matlab

Application Briefs

- Filter Signals Using MATLAB
www.lecroy.com/tm/library/LABs/PDF/LAB_WM760.pdf
- Decoding NRZ Data Using MATLAB
www.lecroy.com/tm/Library/LABs/PDF/LAB766.pdf

Contact Information

THE MATHWORKS

www.mathworks.com/contact
508-647-7000

To request your free Getting Started Guide for using MATLAB with LeCroy oscilloscopes, contact:

LECROY CORPORATION

contact.corp@lecroy.com
845-578-6020

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