

Using MATLAB® with Agilent Instruments

Agilent Technologies provides core measurement tools to the electronics, communications, life science research, environmental, and petrochemical industries. MATLAB® extends the functionality of Agilent instruments—including data acquisition hardware, digitizers, function generators, multimeters, network analyzers, oscilloscopes, signal analyzers and generators, and vector signal analyzers—by enabling users to make customized measurements, perform data analysis, generate arbitrary waveforms, and develop automated tests.

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 3,500 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 Agilent instruments by making customized measurements in MATLAB
- Test the functionality of electronic devices by making measurements with Agilent instruments and comparing them against known baselines in MATLAB
- Excite electronic devices using Agilent instruments with simple or complex waveforms created 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 Agilent instruments
- Design custom filters in MATLAB and apply them to signals acquired from Agilent instruments

- Control and configure multiple instruments in a complex test setup
- Generate reports to share results with colleagues, customers, or management

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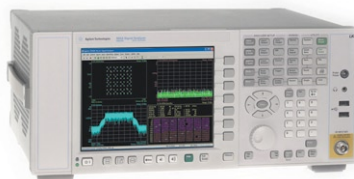
In the MATLAB environment, you can configure and control Agilent instruments. When used together with Instrument Control Toolbox, MATLAB supports instrument communication over GPIB, LAN, USB, and RS-232 serial interfaces; Agilent IVI and VXIplug&play drivers; as well as the emerging LXI instrument standard. You can also install and use MATLAB directly on select Windows-based Agilent instruments and set instrument parameters, make measurements, and acquire them into MATLAB for basic or advanced analysis.

In the Agilent user environment, you can also execute MATLAB algorithms using one of several solutions that integrate MATLAB and Agilent instruments. You create your own math and analysis functions in

MATLAB, and then apply them directly to waveforms acquired by the Agilent instrument in Agilent user environment. Use Agilent Option 201 with 86100C DCA-J oscilloscopes, and Agilent Option 010 (N5430A) with DSO80000 and 8000 series oscilloscopes. Ask your Agilent or MathWorks representative about the latest features available.

Online Resources

- Overview, videos, drivers, and examples of using MATLAB with Agilent instruments www.mathworks.com/agilent/overview
- MATLAB www.mathworks.com/agilent/matlab
- Instrument Control Toolbox www.mathworks.com/agilent/instrument
- Data Acquisition Toolbox www.mathworks.com/agilent/daq



For More Information

To discuss how you can use MATLAB with Agilent instruments or to arrange a product demo, contact:

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