DASY*Lab* ®
*Data Acquisition System Laboratory*

MC MEASUREMENT COMPUTING

Features

- Create complex applications in minimal time without programming
- Lets you build worksheets using graphical functions:
  - Select icons from a palette and place them on worksheet
  - Connect them using "soft" wiring
  - Set parameters to determine performance
- Implements real-time operations, including PID control:
  - Input icons bring live data into the worksheet
  - Functional icons perform computations
  - Output icons send live data to the hardware
- Provides standard real-time displays (charts, meters, graphs)
- Layout Windows allow you to create simple custom displays and reports for operational end users
- Provides complete library of computational functions:
  - Math, trigonometry, and Boolean logic
  - Formula icon implements user-entered equations
  - Statistics, signal analysis and control
  - Data manipulation and storage
- Includes generator functions to simulate inputs
- Switch, Slider, and Coded Switch controls allow user interactions
- "Black Box" function lets you create sub-worksheets, up to 256 levels
- Provides serial, OPC, ODBC, and network interface functions
- Supports data acquisition hardware from Measurement Computing and other vendors
- Includes a tutorial, example worksheets, and on-line help
- Compatible with Windows 2000®, Windows XP®, Windows Vista® (32- or 64-bit), and Windows 7 (32- or 64-bit) operating systems
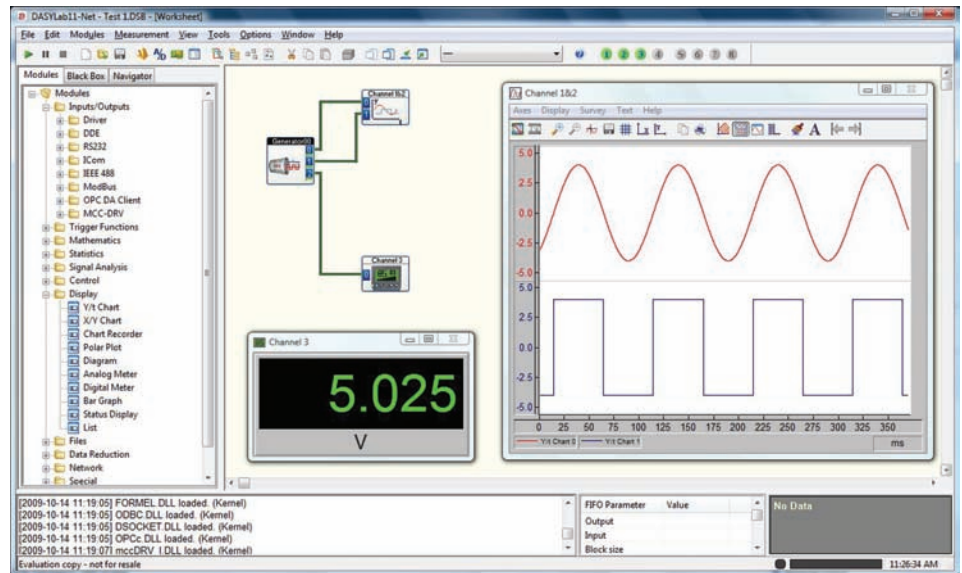
DASYLab lets you interactively develop PC-based data acquisition applications by simply attaching functional icons. DASYLab offers real-time analysis, control, and the ability to create custom graphical user interfaces (GUIs). What's more, in contrast to other graphical programming environments, which can require weeks of training to master, DASYLab has a very short user-learning curve. Many applications can be configured in a few minutes, rather than days or weeks.

Extensive Hardware Support

DASYLab supports all of Measurement Computing's data acquisition hardware, as well as a host of hardware from over 20 vendors. There is a wide variety of I/O capabilities to choose from, such as analog, digital, counter/timer, IEEE 488, RS-232, and DDE, plus any I/O device that is supported by an OPC (OLE for Process Control) driver.

Effortless Setup

To set up an application, simply drop the desired icons on your worksheet. Connecting all your icons together requires very little effort — simply click and drag them together or drag the output box of one functional icon to the input box of another functional icon (e.g., statistics).

Custom, Real-Time Data Display

DASYLab provides a comprehensive selection of real-time display format capabilities for easy development of custom displays. You also have your choice of a host of other features such as limit and trend indicators and the ability to zoom and scroll waveforms, plus display overlapping traces and waterfall plots.

Powerful, Real-Time Data Analysis and Control

DASYLab includes a wide range of real-time data analysis and control functions for easy development of custom applications. Within these groups, there are specific modules for performing FFTs, Digital Filtering, Polynomial and Linear Regression, Logical Operations, and much more. These modules all have simple set up with point and click configuration, allowing complex calculations to be set up in seconds.
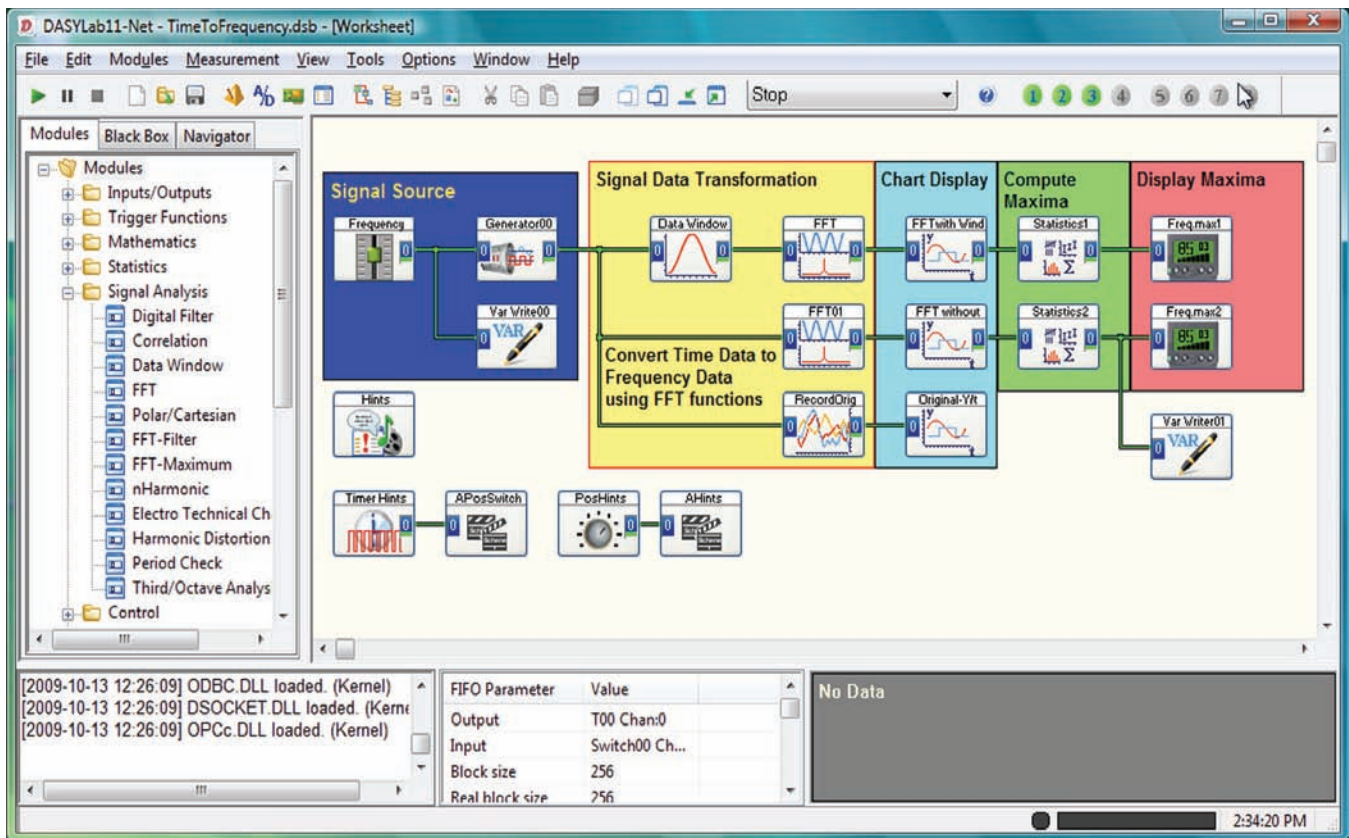
Worksheet

The Worksheet is where you create the data flow logic for the application. Select and combine the desired function modules and connect them with wires that represent the data flow.

The browser window displays a tree structure containing all available function modules as well as any saved block boxes. It also contains a navigator to quickly find specific modules in a worksheet. The console window displays graphical and numerical information about content and structure of the data flow.

Dialogs and Displays

Configure modules easily using the Module Properties dialog boxes. Easily specify the capability of each function block, the number of channels and the parameter settings.

Use the different displays in DASYLab to represent your data online. Interactively zoom and view cursor measurements on or off-line.

Control Sequencer

DASYLab/Full contains the Control Sequencer, a tool designed to control sophisticated applications consisting of more than one DASYLab worksheet. The Control Sequencer supervises the execution of worksheets, contingent on user-defined conditions and events. You can define multiple actions for each worksheet to control the flow of the application. The Control Sequencer setup window organizes the worksheets in a tree, showing the actions and associations for each worksheet.

Layouts and Reports

Use the DASYLab Layout Windows to create a clear and informative presentation of your data and results. Represent your data in scope displays, numerical listings, chart recorders, or bar graphs, just by placing the corresponding objects in the layout and connecting them to the worksheet modules. Use text or graphical elements to enhance the clarity and useability of your application.

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Create Custom Graphical User Interfaces

DASYLab's integrated Layout Windows provide the means to create custom graphical user interfaces (GUIs), allowing you to present screens that contain only the information pertinent to a specific test. Simply use the tool box to draw and place switches, charts, digital and analog indicators, text, and your own custom bit-map images.

One application can contain up to 200 animated screens, and each screen can be dynamically activated based on prescribed conditions within a test or process. Layout Windows allow you to automatically print out any of the screens when predetermined conditions are met. As a result, generating custom reports and documentation is as easy as creating graphical user interfaces.
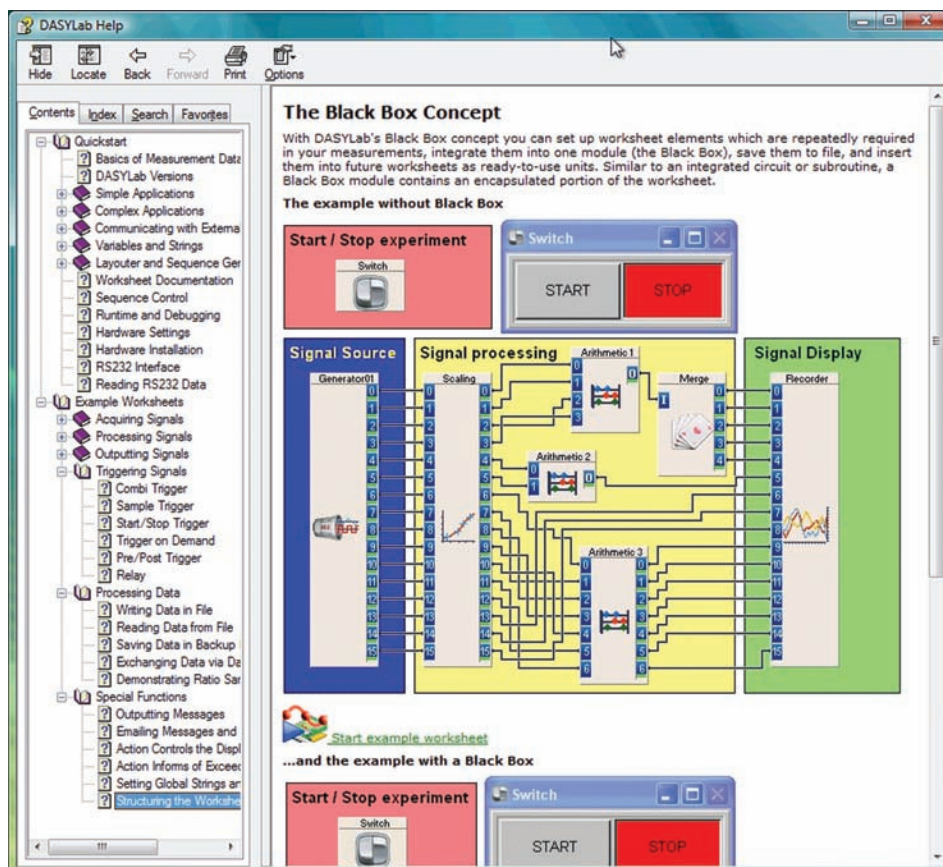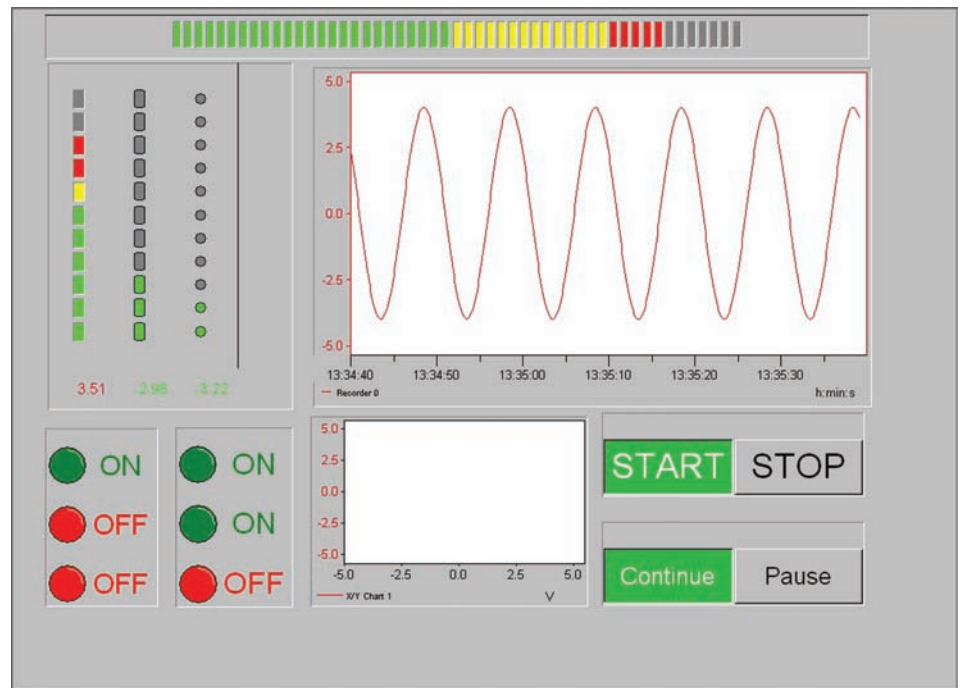
DASYLab Help and Tutorial

DASYLab help is in the HTML format. The index contains the help section for the installed standard drivers and the tutorial. The DASYLab tutorial contains a quick start program which leads you through the various areas in DASYLab, and a collection of example worksheets demonstrate the working method of the modules in the data flow. You can start the worksheets from the help menu and use the worksheets as templates for your own worksheets.

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Version Selection

You can choose between four different DASYLab Versions to get the exact features that you need.

DASYLab LITE includes support for 32 analog input channels on two devices, with a maximum of 64 data connections. One Layout Window is included, allowing you to create a custom report or user display.

DASYLab BASIC, the basic version, includes unlimited data connections and up to 256 analog input channels as well as one Layout Window. Basic does not include Action and Action-enabled modules (such as ODBC, Message, or Email).

DASYLab FULL version includes all standard modules, including the Standard Signal Analysis modules and all Action and Action-enabled modules. In addition, it includes 200 Layout Windows, and the powerful Control Sequencer. It does not include the Advanced Signal Analysis modules.

DASYLab PRO version includes the full set of modules, the complete signal analysis tools, sequence generator, and all available add-on modules (without third-party modules). The PRO version also offers full network functionality.

Group	Module	LE	Basic	Full	Pro
Input/Output	Analog Input	●	●	●	●
	Analog Output	●	●	●	●
	Digital Input	●	●	●	●
	Digital Output	●	●	●	●
	Counter Input	●	●	●	●
	Frequency Output	●	●	●	●
	RS232 Input	●	●	●	●
	RS232 Output	○	●	●	●
	ICOMS Input	●	●	●	●
	ICOMS Output	○	●	●	●
	IEEE488 Input	○	●	●	●
	IEEE488 Output	○	●	●	●
	DDE Input	●	●	●	●
	DDE Output	●	●	●	●
	MODBUS Input	●	●	●	●
	MODBUS Output	●	●	●	●
	DAP DLL I/O	○	●	●	●
	OPC Input	●	●	●	●
	OPC Output	●	●	●	●
Trigger	Combi Trigger	○	●	●	●
	Pre/Post Trigger	●	●	●	●
	Start/Stop Trigger	○	●	●	●
	Trigger on Demand	○	●	●	●
	Sample Trigger	○	●	●	●
	Relay	●	●	●	●
Mathematics	Formula Interpreter	○	●	●	●
	Arithmetic	●	●	●	●
	Comparator	●	●	●	●
	Trigonometry	○	●	●	●
	Scaling	●	●	●	●
	Differentiation/Integration	○	●	●	●
	Logical Operations	○	●	●	●
	Slope Limitation	○	●	●	●
	Bit Mask	○	●	●	●
	Gray Code	○	●	●	●
	Flip Flop	○	●	●	●
	Create Reference Curve	○	●	●	●
Statistics	Statistical Values	○	●	●	●
	Select Values	○	●	●	●
	Histogram Classification	○	●	●	●
	Regression	○	●	●	●
	Rainflow Classification	○	○	○	●
	Two Channel Classification	○	○	○	●
	Counter	○	●	●	●
	Minimum/Maximum	○	●	●	●
	Sort Channels	○	●	●	●
	Pulse Analysis	○	●	●	●
	Check Refer. Curve	○	●	●	●
Signal Analysis	Digital Filter	○	●	●	●
	Correlation	○	●	●	●
	Data Window	○	●	●	●
	FFT	○	●	●	●
	Polar/Cartesian	○	●	●	●
	Electro Technical Characteristics	○	○	●	●
	Harmonic Distortion	○	○	●	●
	Period Check	○	○	●	●
	FFT Filter	○	○	○	●
	FFT Maximum	○	○	○	●
	Third/Octave Analysis	○	○	○	●
	nHarmonic	○	○	○	●

Group	Module	LE	Basic	Full	Pro
Control	Generator	●	●	●	●
	Stop	○	●	●	●
	Switch	○	●	●	●
	Coded Switch	○	●	●	●
	Slider	○	●	●	●
	PID Control	○	●	●	●
	Two-Point Control	○	●	●	●
	Time Delay	○	●	●	●
	TTL Pulse Generator	○	●	●	●
	Latch	○	●	●	●
	Signal Router	○	●	●	●
	Write Block Time	●	●	●	●
	Global Variable Read	●	●	●	●
	Global Variable Write	●	●	●	●
	Sequence Generator	○	○	○	●
Display	Y/t Chart	●	●	●	●
	X/Y Chart	○	●	●	●
	Polar Plot	○	●	●	●
	Chart Recorder	●	●	●	●
	Diagram Chart	●	●	●	●
	Analog Meter	●	●	●	●
	Digital Meter	●	●	●	●
	Bar Graph	●	●	●	●
	Status Lamp	●	●	●	●
	List Display	●	●	●	●
Files	Read Data	●	●	●	●
	Write Data	●	●	●	●
	Backup Data	○	○	●	●
	ODBC In	○	○	●	●
	ODBC Out	○	○	●	●
Data Reduction	Average	●	●	●	●
	Block Average/Peak Hold	●	●	●	●
	Separate	○	●	●	●
	Multiplexer/Demultiplexer	○	●	●	●
	Shift Register	●	●	●	●
	Cut Out	○	●	●	●
	Time Slice	○	●	●	●
	Circular Buffer	○	○	●	●
Network	Net Input	○	○	○	●
	Net Output	○	○	○	●
	Message Input	○	○	○	●
	Message Output	○	○	○	●
	DataSocket Import	○	●	●	●
	DataSocket Export	○	●	●	●
Special	New Black Box	○	●	●	●
	Black Box Export/Import	○	●	●	●
	Action	○	○	●	●
	Message	○	○	●	●
	E-Mail	○	○	●	●
	Time Base	○	●	●	●
	Signal Adaptation	○	●	●	●
Add-On	Transfer Function	○	○	○	●
	Convolution	○	○	○	●
	Block Weighting	○	○	○	●
	Universal Filter	○	○	○	●
	Save Universal File	○	○	○	●
Program	Control Sequencer	○	○	●	●
	Number or Layout Pages (VITool)	1	1	200	200
	DASYLab Lite is limited to 64 data channels				

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What's New in DASYLab 11

DASYLab 11 continues our commitment to deliver an easy-to-use data acquisition application that requires no programming. Whether they are scientists or engineers, DASYLab allows users to focus on their particular areas of expertise, while tapping into the power of the display, analysis, and control features needed to fully process measurement data.

New & Improved Measurement Computing Driver. DASYLab 11 supports most Measurement Computing devices supported by the Universal Library, encompassing analog, digital, and counter/timer input and output, including high-speed synchronous input and output.

Diagram Module. DASYLab 11 updates the Diagram graphical display module, which provides outstanding interactive versatility of time domain data. The Diagram module may be configured as an enhanced Y/t Chart, an X/Y Chart, or a Data Chart Recorder. It supports multiple y-axes and allows the user to freely assign signals to each y-axis. For easy comparison of the time domain waveforms, users can define the offset used to display a signal, and can dynamically move a signal around within the graphical display to compare one signal with another. Users can now define a reference curve or tolerance band to display at the same time as they are collecting new data.

Reference Curve Editor. The new Reference Curve Editor allows the user to define the tolerance band interactively, using a table of reference points and a graphical display. The reference curve can be used in the Diagram Y/t Chart, and Chart Recorder modules to display the acquired signal against the defined tolerance band. In addition, the acquired signal can be monitored using the Check Reference Curve module, allowing the user to activate different alarms and events when the data value is within range, above, or below a specified range.

Enhanced e-Mail Module. The e-mail module now includes an internal SMTP client to allow the user to send unattended e-mail via a standard SMTP server. E-mail messages can be configured to send a message with data results on a scheduled basis or to send alarm messages when a data event or alarm condition is detected.

Ease-of-Use Features. DASYLab 11 continues the long tradition of on-going improvement to the existing software features, including filename path length, improved navigation in module property dialog boxes, new navigation on the work area using the mouse wheel features, improved dialog boxes throughout the product, and updated and improved Help.

New Driver Support. DASYLab 11 will ship with updated drivers that include the new Measurement Computing driver with support for all InstaCal/Universal Library supported products, an updated IOtech driver, an updated Microstar Laboratories DAP driver, and an updated NI-CAN driver that supports NI USB-CAN devices.

System Requirements

For correct DASYLab performance the following minimum requirements must be met:

Hardware
- **CPU** – x86 compatible processor, 500 MHz or more
- **Memory** – At least 512 MB, 1 GB recommended
- **Hard Drive** – 150 MB free storage space, of which at least 100 MB on the system partition
- **Graphics Board** – Color depth at least 16 bit (High Color), recommended 24 or 32 bit (True Color)
- **Screen Resolution** – At least 1024x768

Operating Systems
- Windows 2000 Update Rollup 1 for Service Pack 4
- Windows XP Pro with Service Pack 3
- Windows Vista 32-bit with Service Pack 2
- Windows Vista 64-bit (as 32-bit application)
- Windows 7 32-bit
- Windows 7 64-bit (as 32-bit application)

Note: Not every DASYLab driver supports all the listed operating systems.

Ordering Information

Description	Part No.
Lite version, includes all drivers; comes without analysis, limited module count, and one Layout Window	DASYLab LITE
Basic version, includes all drivers; comes with all standard modules (except Signal Analysis and Actions), and one Layout Window	DASYLab BASIC
Full version, includes all drivers; comes with all standard modules, 200 Layout Windows, and Control Sequencer	DASYLab FULL
Pro version, includes all drivers; includes Full version plus all add-on modules (without third-party modules)	DASYLab PRO
Run-time license for DASYLab	DASYLab RUNTIME

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For complete product specifications, pricing, and accessory information, call 1-800-234-4232 or visit **mccdaq.com**.