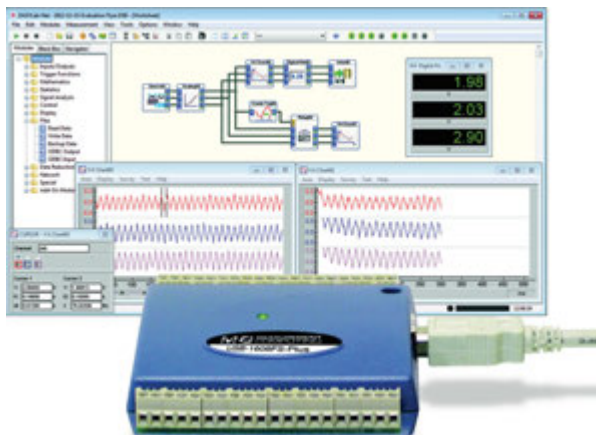


DASYLab[®]

Data Acquisition System Laboratory

Getting Started

Using DASYLab with a Measurement Computing DAQ Device



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Introducing the MCC driver for DASyLab

Thank you for purchasing DASyLab from Measurement Computing Corporation (MCC).

This Getting Started booklet contains the latest information on downloading, installing, and using DASyLab version 13.0 or later and the MCC driver for DASyLab. DASyLab is an icon-based data acquisition, graphics, control, and analysis software package.

You must first install InstaCal – the installation, calibration, and test utility for MCC hardware – before you can use DASyLAB with an MCC device.

Please read this document completely before you install any software.

System requirements

DASyLab 13.0 and later requires the following minimum hardware and operating system requirements.

Hardware

- CPU - x86 compatible processor, 500 MHz or more
- RAM - At least 1 GB; 2 GB recommended
- Hard disk space - 250 MB free storage space, of which at least 200 MB is on the system partition
- Graphics board - 24- or 32-bit (True Color)
- Screen resolution - At least 1024 × 768

Software

- Latest version of the MCC InstaCal driver and utility software (recommended) – refer to www.mccdaq.com/software.aspx to download the latest version of InstaCal.
- Microsoft® .Net Framework 2.0 SP2 or later

Operating systems

You must have administrator rights on your account using one of the following operating systems:

- Windows® 8 64-bit (as 32-bit application)
- Windows 8 32-bit
- Windows 7 64-bit (as 32-bit application)
- Windows 7 32-bit
- Windows Vista® 64-bit (as 32-bit application)
- Windows Vista 32-bit
- Windows XP Pro with Service Pack 2

Install InstaCal

Install InstaCal from the *Measurement Computing Data Acquisition Software* CD that shipped with your device.

You must be logged in as an administrator to install InstaCal.

Connect your MCC USB device to its signal source

Refer to your MCC device user's guide for instructions on installing and connecting the device to an analog signal source.

Connect the wires from the device to the signal source so that the device acquires signals from analog channel 0.

All MCC user's guides are available on the *Measurement Computing Data Acquisition Software* CD that shipped with your device. User's guides are also on the *MCC Product Manuals Page* at www.mccdaq.com/manuals.aspx.

Run InstaCal and add your MCC device

To run InstaCal and add an MCC device to the InstaCal configuration, complete the following steps.

1. Run InstaCal from the **Start** menu.
2. To add a USB, PCI/PCIe, or WLS device, click **OK** on the **Plug and Play Board Detection** dialog box to add the device to the InstaCal configuration.

To add any other type of device, complete the following steps:

- a. Select **Install»Add Board**.
 - b. Click on the tab in the **Board Selection List** dialog box that corresponds to the type of device you are using.
 - c. Select the device from the list, and click **Add**.
The device is added to the InstaCal configuration.
3. Select **File»Exit** to close InstaCal.

Install DASyLab

To install DASyLab from the installation CD, complete the following steps:

1. Insert the CD in your CD drive.

The installation program should start automatically. If it does not, browse the CD and double-click `StartCD.exe`.

Note: To download and install DASyLab, click the Download DASyLab v13 link on the [Software/Drivers Downloads](#) page at www.mccdaq.com/software.aspx to save the installation program.


Save and then run the file, and click **OK** on the first dialog to extract the installation files to the default location. By default, the installation program runs automatically.

2. Exit all running programs and click **Next**.

3. Follow the instructions and click **Next** on the next three setup dialog boxes to select the installation directory and accept the license agreements.
4. Click **Next** in the **Start Installation** dialog box.
The first step of the DASyLab installation is complete when the **Installation Complete** dialog box opens.
5. Click **Next** to launch the configurator.

Configure DASyLab using the configurator

To configure DASyLab using the configurator, complete the following steps:

1. On the **Registration** tab, enter your name (**User**) and the name of your company in the **User Information** area.
2. If you purchased DASyLab, enter the **Serial number** provided on the DVD insert.
If you are evaluating DASyLab, select the **Install evaluation version** checkbox.
3. Click **Continue**.
4. On the **Packages** tab, click  to expand the **Data acquisition** node.
5. Select **Measurement Computing**, click **Enable**, and then click **Continue**.
6. On the **Options** tab, select the file extensions you want to associate with DASyLab and click **Finish**. Refer to the *Options* topic in the *Configurator* section of the DASyLab help for explanations of these file types.
7. Click **Yes** to restart your computer immediately, or click **No** to restart your computer at a later time.

When your computer restarts, DASyLab is fully installed and ready to use.

Exercise: Acquiring, displaying, and writing analog data

You can acquire, display, and write data from a single analog channel with DASyLab, complete the following steps. Use either a physical MCC DAQ device or the DEMO-BOARD.

Run DASyLab

To run DASyLab and view the MCC-DRV modules on the DASyLab browser, complete the following steps:

1. Run DASyLab from the **Start** menu.
2. Expand the Modules browser to view the **MCC-DRV** folder.

Only the modules in this folder can be used with MCC data acquisition devices.

Add an Analog Input module

To add an MCC Analog Input module to the DASyLab worksheet, complete the following steps:

1. Drag and drop the Analog Input module from the MCC-DRV folder into the worksheet.

DASyLab prompts you to select from installed MCC devices.

2. Select the analog channels on the device you are going to use with DASyLAB, and click **OK**.



3. Double-click on the Analog Input module to open its module dialog box.

By default, analog channel 0 is enabled. You can enable other channels by clicking on them.

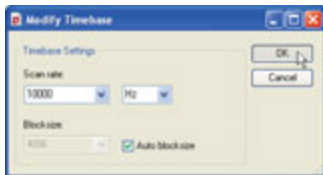
For this exercise, leave channel 0 enabled and all other channels disabled.



4. Enter -5.000 in the **Lower limit** box and 5.000 in the **Upper limit** box.
5. Click **Measurement** to open the **Measurement Setup** dialog box.
6. Click **Modify** to open the **Modify Timebase** dialog box.
7. Change the **Scan rate** to a rate supported by your device.

Note: If you are using the DEMO-BOARD, select 100 for the scan rate, which is the maximum for that device.

8. Click **OK** on the **Modify Timebase**, **Measurement Setup**, and **Analog Input** dialog boxes to close all three dialog boxes, save your settings, and return to the DASyLab worksheet.

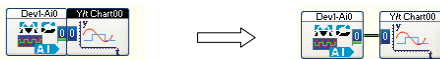


Add a Y/t Chart module

You can use a display module such as a Y/t Chart module to display the signals acquired by the MCC device. To add a Y/t Chart module, complete the following steps:

1. Expand the Module browser to view the modules in the **Display** folder.
2. Drag and drop the Y/t Chart module into the worksheet.
3. Drag the Y/t Chart module so that its input touches the output of the Analog Input module, and then release the mouse button.

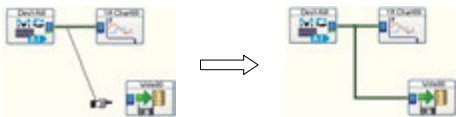
A connection is made between the output of the Analog Input module and the input of the Y/t Chart module.



Add a Write Data module

Connect a Write Data module to the Analog Input module to write the analog data to a file. To add a Write Data module, complete the following steps:

1. Expand the Module browser to view the modules in the **Files** folder.
2. Drag and drop a Write Data module onto the worksheet.
3. Click on the connection line between the Analog Input module and the Y/t Chart module, and drag a new connection to the input of the Write Data module. This connects the output of the Analog Input module to the Write Data module.



Configure the data file

The Write Data module has numerous properties you can set that determine how the file is saved. To set up the data file using the **Write Data** dialog box, complete the following steps:

1. Double click on the Write Data module to open the **Write Data** dialog box.
2. Select **ASCII (Excel CSV Preset)** from the **File format** list box. Your data is saved in a *comma-separated values* (CSV) text file that you can open or import with Microsoft Excel®.
3. Click **Yes** in the **User Information** dialog box to set the default delimiter to **Comma** for CSV files.
4. Click **File** to set up the data file with its default name on the Desktop, and click **Save**.
5. Click **Options** to open the **Write Data: ASCII Format** dialog box.
6. In the **Decimal** frame, next to **Number**, verify the number of decimals that you want to store in the ASCII file. The default is 2.
7. In the **Time format** frame, select **Date+time** from the list to store the actual date and time for each row of samples.
8. Click **OK** to close the **Write Data** dialog box and return to the worksheet.

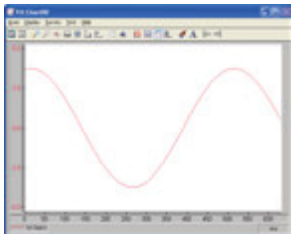
Acquire, display, and write data

After setting up the data acquisition operation, run the worksheet to acquire analog input data from an MCC DAQ device, display the data on a chart, and write the data to a file. To run the worksheet, complete the following steps:

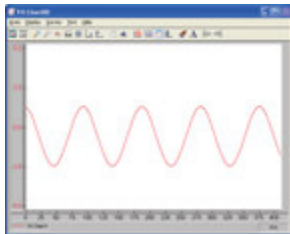
1. Click **Start** (▶) on the DASyLab Function bar.
2. Click on the **Restore Up** icon on the Y/t Chart's title bar to expand the window.

The analog signal acquired from your MCC DAQ device is plotted and displayed on the **Y/t Chart00** window.

DEMO-BOARD and USB-16608FS-Plus examples are shown next.



Signal generated by the DEMO-BOARD with a scan rate of 100.



Signal generated by a USB-1608FS-Plus with a scan rate of 10,000.

3. Click **Stop** (■) on the DASyLab Function bar to stop the program.
4. Open the DEFNAME.CSV file on the Desktop using Excel.

DEMO-BOARD and USB-1608FS-Plus examples are shown next.

Date	Measurement time [s]	Sample [V]
4/16/2013	0	3.39
4/16/2013	0.01	5.17
4/16/2013	0.02	2.89
4/16/2013	0.03	2.57
4/16/2013	0.04	3.2
4/16/2013	0.05	1.81
4/16/2013	0.06	1.38
4/16/2013	0.07	0.93
4/16/2013	0.08	0.47
4/16/2013	0.09	0
4/16/2013	0.1	-0.47
4/16/2013	0.11	-0.93
4/16/2013	0.12	-1.38
4/16/2013	0.13	-1.81
4/16/2013	0.14	-2.2
4/16/2013	0.15	-2.57

Excel file of DEMO-BOARD data with a scan rate of 100

Date	Measurement time [s]	Sample [V]
4/16/2013	0	0.35
4/16/2013	0.0001	0.6
4/16/2013	0.0002	0.84
4/16/2013	0.0003	0.67
4/16/2013	0.0004	0.69
4/16/2013	0.0005	0.69
4/16/2013	0.0006	0.68
4/16/2013	0.0007	0.66
4/16/2013	0.0008	0.63
4/16/2013	0.0009	0.6
4/16/2013	0.001	0.55
4/16/2013	0.0011	0.5
4/16/2013	0.0012	0.45
4/16/2013	0.0013	0.38
4/16/2013	0.0014	0.32
4/16/2013	0.0015	0.26

Excel file of USB-1608FS-Plus data with a scan rate of 10,000

5. Exit DASyLab, and save the worksheet when prompted.

Learn more about DASyLab and the MCC modules

You have now successfully acquired and displayed analog data using DASyLab.

To learn more about the MCC DASyLab modules, select **MCC-DRV»Help** from the DASyLab **Help** menu.

Technical support

Additional information about DASyLab is available on our website at www.mccdaq.com. You can also contact Measurement Computing Corporation with specific questions.

- Knowledgebase: kb.mccdaq.com
- Tech support form: www.mccdaq.com/support/support_form.aspx
- Email: techsupport@mccdaq.com
- Phone: 508-946-5100 and follow the instructions for reaching Tech Support

For international customers, contact your local distributor. Refer to the International Distributors section on our website at www.mccdaq.com/International.

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