

December 23rd 2005

AxoGraph Newsletter

Molecular Devices Corporation, 3280 Whipple Road, Union City, CA 94587, U.S.A.



Main Items:

Almost complete

New and improved features

Tips

AxoGraph X beta 14 Released

Summary of New and Improved Features

New :

- Peak detection and measurement
- Digital filter
- Manipulate selected text (graph, convert to table, statistics)
- Send pulses to all 16 digital channels

Improved :

- Mouse amplitude measurement
- Spreadsheet (user units, copy and paste)
- Scale and offset
- Move pulses between channels in a protocol

Only six main features are not yet available :

- | | |
|------------------------|----------------------|
| Assign X and Y columns | Convert to histogram |
| Error bars | Power spectrum |
| Log axes | Fit general |

Estimated Completion Date

Base on ~1 week per major feature, our development timeline targets commercial release of AxoGraph X in early February 2006. Development will continue through 2006 with many new features and improvements planned, including support for two USB-based digitizers. A Windows version is also at an advanced stage.

**Detect and
measure peaks**

**Manipulate
selected text**

Data Analysis

Peak detection and measurement. Automatically detect and measure peak amplitudes and shape parameters. The user interface has been improved by combining peak detection and peak measurement settings into a single tabbed dialog. The detection threshold level is displayed on the graph.

Mouse measurement. All mouse measure options are available. Previously, the location of a mouse click, or the distance between two clicks could be measured. Now, the amplitude of one or more traces at the mouse click location, or the amplitude difference between two clicks can be measured.

Digital Filter. Apply an ideal Gaussian filter to all traces in the front window. The "Filter Width" shown in the dialog corresponds to four standard deviations of the Gaussian filter kernel.

Spreadsheet. The spreadsheet view of graph data (button at top-right of graph window) has been improved. It displays data values in user units (ms, nA, etc.), and a progress dialog is shown while building large spreadsheets. Selected columns, rows or cells can be copied to a tab-delimited text table on the clipboard.

Selected Text. Analysis results can be manipulated and graphed using items in the "Selected Text" menu. The "Graph" feature was introduced in beta 13, but it now handles a wider range of table layouts. All Selected Text items are now active...

"Graph" : convert selected text columns to a graph

"Clean Up" : removes unwanted text from the results window

"Convert Lists to Table" : takes several lists of numbers and rearranges them into a table

"Transpose Table" : handy for getting access to a single row, or preparing results for a spreadsheet

"Statistics for Columns" : calculates mean and SEM for the values in each column of a table

"Save Selected Text" : save selection to new file

16 Digital Outputs

Auto-launch
MC700B

Data Acquisition

Sixteen Digital channels. AxoGraph X support all 16 digital inputs and outputs on Digidata 1320 series, and Instrutech digitizers. Previously, support was limited to inputs and outputs with BNC connectors (8 channels on the Digidata - 4 front and 4 rear, and only 4 channels on the Instrutech). The additional input and output channels can be accessed via the multi-pin sockets on the rear of these digitizers. Contact the manufacturer to find out what type of multi-pin connector is required.

Internal Trigger. Any Analog Input channel can now be used for 'internal' triggering, not just the acquired channels. The external (hardware) trigger is more precise, but pre-trigger data can be acquired with the internal trigger.

Synchronize Protocols. When copying a protocol to a new rig with a different configuration, the protocol's input and output channels may have different names, or be inactive. This problem has been addressed in two ways. When a protocol is loaded and a mismatch is detected, AxoGraph attempts to synchronize the protocol with the local configuration. When a pulse on an inactive channel is edited, it can be re-assigned to another channel.

Automatic Launch of Multiclamp Commander. When the configuration is set to read telegraph information from Multiclamp Commander (MC700A or MC700B), AxoGraph will automatically launch it as required.

Online analysis window. An analysis window opens when certain protocols are run ("Pulse + Amplitudes" for example). Previously the window was set to a default position and y-axis range at the start of each acquisition. If you zoom, relocate or resize this window, AxoGraph X will now respect these changes.

Crashing bug fixed**Shortcuts when closing modified files**

Bugs Fixed

Beta 13 sometimes lost track of how many windows were open. This caused a crashed when initiating acquisition while a data file was still open from a previous acquisition, and occasional crashes during data analysis.

The "Offset" component of "Analyze -> Scale and Offset" did not work in Beta 13. This bug has been fixed.

Many other minor bug fixes and performance enhancements (thanks for all the helpful suggestions!)

Tips

- If you are still using AxoGraph 4.9 for data analysis, the plugin for reading files acquired with AxoGraph X has been updated to handle changes in the file format. The new plug-in can be found in the "Extras" folder.
- When closing a modified file a dialog appears asking, "Do you want to save the changes to the document?" The keyboard shortcuts for dismissing this dialog are 'esc' for Cancel (works with any dialog), or 'tab' 'tab' 'return' for Don't Save. Unfortunately, this odd behavior is hard-coded into the third-party framework that AxoGraph X is built on.
- It is possible to double-click on a foreign file and have it automatically open in AxoGraph X. For example, to open pClamp ABF files (with the extension '.abf') in AxoGraph...

Select an .abf file in the Finder and choose "Get Info"
Set "Open with" to AxoGraph X
Click the "Change All..." button

This procedure should work, but there is a known bug in OS X that may interfere. A work around is supplied in the "Extras" folder. Run the script in "Reset file extension associations" then reboot. This should help eliminate problems forming file associations with any OS X application.

We appreciate
any feedback on
beta 14

Download Instructions for AxoGraph X

AxoGraph X 1.0 beta 14

Go to the download site by clicking on this link...

<http://files.axon.com/axographxbeta/>

Alternatively, copy and paste the URL to your web browser. A dialog will appear asking for a username and password...

user: xbetatest
password: osxgraph

Bugs can be reported by selecting "E-mail Technical Support" under the AxoGraph X Help menu. We really appreciate your feedback.

When running beta 14 for the first time, a registration dialog will appear. Automatic registration may not work if your computer is behind a firewall. If you hit the "Register" button and the connection fails, please continue with the registration process by e-mail.

To analyze files acquired using AxoGraph X, move the file named "**Import AxoGraph X" into the "Plug-In Programs" folder in the AxoGraph 4.9 folder. This will permit AxoGraph 4.9 to read and analyze data files acquired by AxoGraph X.