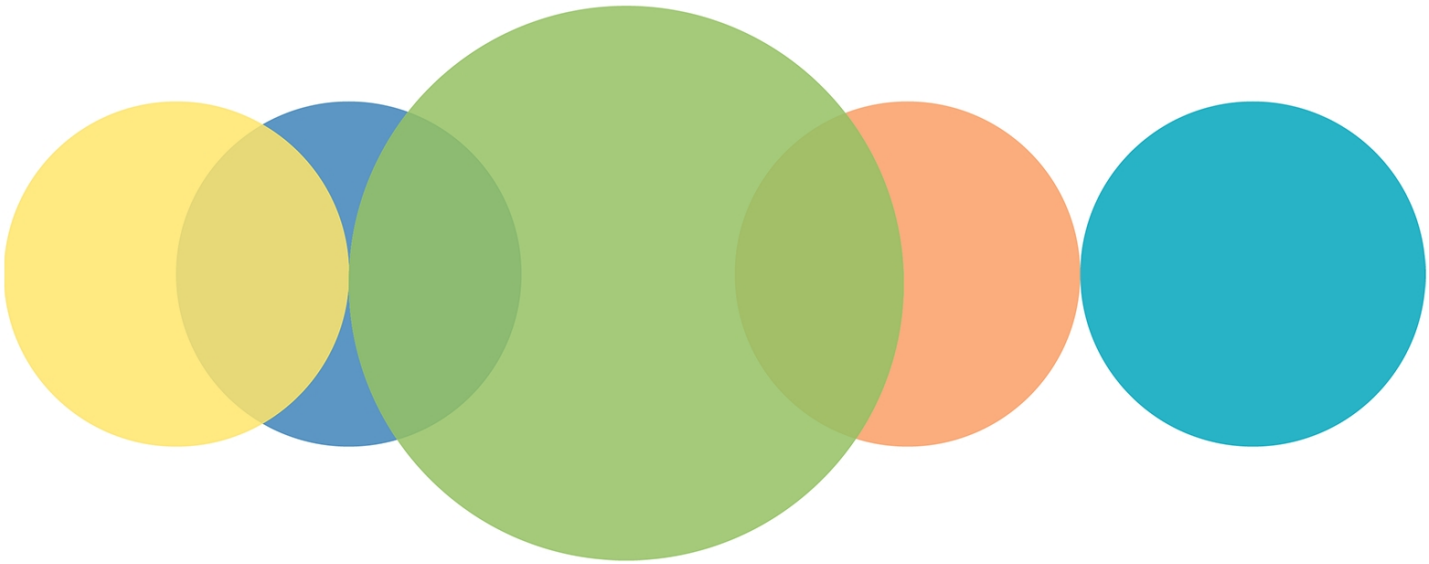


pCLAMP™

Data Acquisition and Analysis Software

Version 11.1

Software Release Notes

MOLECULAR DEVICES

Software Version 11.1
October 2019

Product manufactured by Molecular Devices, LLC.
3860 N. First Street, San Jose, California, 95134, United States of America.
Molecular Devices, LLC is ISO 9001 registered.

Contents

Chapter 1: pCLAMP Software Version 11.1 Release Notes

The version 11.1 update is a minor release. Included are a summary and details of the changes incorporated in this revision as compared to version 11.0.3, the last general release of the software.

The following topics are included in this chapter:

For computer requirements, software update instructions, and other related details, see pCLAMP Software General Information on page 27.

pCLAMP Software Version 11.1 Summary

The version 11.1 update incorporates the following changes:

Tracking ID	Status	Functional Area	Description
ST-294	New	Clampfit **Batch Analysis**	Clampfit Software Batch Analysis Divide by Maximum or Minimum Value Column Normalization Function
ST-255	Modified	Clampex Software	Clampex Software Edit Protocol Window is Resizable
ST-258	Modified	Clampex Software	Added Clear Values in Clampex Software Edit Protocol Waveform tab and in Gap-Free Mode
ST-265	Modified	Clampex Software	Clampex Software Edit Protocol Waveform Epoch Cell is Wider
ST-298	Modified	Clampfit Software	Clampfit Software Batch Analysis Menu Option Moved
ST-221	Fixed	Clampfit **Batch Analysis**	Exporting Results to Excel Creates Tabs With Random Numbers in Clampfit Batch Analysis
ST-248	Fixed	Clampfit Software	Event Statistics for Some Data Shows Wrong Units in Clampfit Software
ST-259	Fixed	Clampfit Software	Wrong Latency Measurement in Population Spike Search in Clampfit Software
ST-260	Fixed	Clampex Software	Typing % in Comment tag Crashes Clampex Software
ST-271	Fixed	Clampfit Software	ATF Files Generated Through Transfer Trace Fail to Open in Clampfit Software
ST-272	Fixed	Clampfit Software	STA Files Fail to Open in Clampfit Software

Tracking ID	Status	Functional Area	Description
ST-273	Fixed	Clampex Software	Clampex Software Restarts When Parameters Change Through the MultiClamp 700B Microelectrode Amplifier
ST-274	Fixed	Clampfit **Batch Analysis**	Analysis Results Sheet Displays Random Names for Selected Files in Clampfit Software Batch Analysis
ST-275	Fixed	Clampfit **Batch Analysis**	Exported Data to Excel is not Displayed in Chronological Order in Clampfit Software Batch Analysis
ST-276	Fixed	Clampfit Software	Action Potential Search With Some Noisy Data Crashes Clampfit Software
ST-277	Fixed	Clampfit Software	Some of the Event Statistics Data in Clampfit Software Fail to Display
ST-279	Fixed	Clampfit **Batch Analysis**	Exported Data to Dataset Results Sheet not Displayed in Chronological Order in Clampfit Software Batch Analysis
ST-281	Fixed	Clampex Software	Incorrect Digital Output When Analog Output is Enabled in Clampex Software
ST-282	Fixed	Clampfit Software	Column Arithmetic is Broken in Clampfit Software
ST-285	Fixed	Clampfit Software	Double-clicking a data file does not open it in Clampfit Software
ST-286	Fixed	Clampfit Software	Low Pass Gaussian 1000Hz Filter Sometimes Crashes Clampfit Software
ST-288	Fixed	Clampfit Software Help	The Link for Action Potential Search in Clampfit Software Help is Broken
ST-289	Fixed	Clampfit Software	Quick Graph Printing Problem in Clampfit Software
ST-290	Fixed	Clampfit Software Help	Wrong Link for Action Potential Search Window Help Button in Clampfit Software
ST-291	Fixed	Clampfit Software	Clampfit Software Graph Axes Titles are Distorted
ST-292	Fixed	Clampfit **Batch Analysis**	Clampfit Software Batch Analysis Normalized Column Plots Missing in Dataset Results
ST-293	Fixed	Clampfit **Batch Analysis**	Incorrect IV Graph Plotting in the Clampfit Software Batch Analysis Dataset Analysis
ST-297	Fixed	Clampfit Software	Error Exporting Clampfit Software Indexed data Files

New in pCLAMP Software v11.1

The following new features are included in version 11.1.

Clampfit Software Batch Analysis Divide by Maximum or Minimum Value Column Normalization Function

ST-294

In Clampfit **Batch Analysis**, added two new functions in the **Batch Analysis Arithmetic** menu to normalize values of a column by dividing those values by either the maximum value ‘normax()’ or the minimum value ‘normin()’ of the column.

Modifications Made in pCLAMP Software v11.1

The following modifications were made in version 11.1.

Clampex Software Edit Protocol Window is Resizable

ST-255

In Clampex Software the Edit Protocol window is now resizable.

Added Clear Values in Clampex Software Edit Protocol Waveform tab and in Gap-Free Mode

ST-258

In Clampex Software in the Edit Protocol > Waveform tab and in Gap-Free mode, you can **Clear Values** from a right-click menu.

Clampex Software Edit Protocol Waveform Epoch Cell is Wider

ST-265

In Clampex Software the Edit Protocol > Waveform Epoch cell is wider.

Clampfit Software Batch Analysis Menu Option Moved

ST-298

The Clampfit **Batch Analysis** menu option moved out of the **Analyze** menu to a top-level menu position.

Issues Addressed in pCLAMP Software v11.1

The following issues were addressed in version 11.1. Unless otherwise noted, the fixes have no impact on current workflow or data.

Exporting Results to Excel Creates Tabs With Random Numbers in Clampfit Batch Analysis

ST-221

In Clampfit **Batch Analysis** when the results are exported to Excel, tabs generate with random numbers in a spreadsheet .

Resolution:

Fixed.

Wrong Latency Measurement in Population Spike Search in Clampfit Software

ST-259

In Clampfit Software in some data files, the Population Spike Search latency measurement calculation is wrong.

Resolution:

In the Population Spike Search dialog, a new option called **Stimulus rise time** is now available for you to manually adjust the settings.

Event Statistics for Some Data Shows Wrong Units in Clampfit Software

ST-248

In Clampfit Software,when the data file contains pA units, the Event Statistics window displays mV.

Resolution:

Fixed.

Typing % in Comment tag Crashes Clampex Software

ST-260

In Clampex Software, during data acquisition, typing % in the Comments tag crashes the software.

Resolution:

Fixed.

ATF Files Generated Through Transfer Trace Fail to Open in Clampfit Software

ST-271

ATF transfer traces files do not open in Clampfit Software.

Resolution:

Fixed.

STA Files Fail to Open in Clampfit Software

ST-272

When you save online statistics data in Clampex Software, you cannot open it again in Clampfit Software.

Resolution:

Fixed.

Clampex Software Restarts When Parameters Change Through the MultiClamp 700B Microelectrode Amplifier

ST-273

During an acquisition in the Clampex Software, if whole cell capacitance or resistance changes though MultiClamp™ 700B Microelectrode Amplifier, the acquisition stops and restarts.

Resolution:

Fixed.

Analysis Results Sheet Displays Random Names for Selected Files in Clampfit Software Batch Analysis

ST-274

In Clampfit **Batch Analysis**, after a data analysis, the Analysis Results sheet displays random file names for the selected data files.

Resolution:

Fixed.

Exported Data to Excel is not Displayed in Chronological Order in Clampfit Software Batch Analysis

ST-275

In Clampfit **Batch Analysis**, after analyzing data and exporting it to Excel, the exported dataset is not in a chronological order.

Resolution:

Fixed.

Action Potential Search With Some Noisy Data Crashes Clampfit Software

ST-276

Running Action Potential search with some noisy data files crashed Clampfit Software.

Resolution:

Fixed.

Some of the Event Statistics Data in Clampfit Software Fail to Display

ST-277

In Clampfit Software, after an Event Detection search, some of the values fail to display.

Resolution:

Fixed.

Exported Data to Dataset Results Sheet not Displayed in Chronological Order in Clampfit Software Batch Analysis

ST-279

In Clampfit Software Batch Analysis, after analyzing data and exporting it to Dataset, the dataset is not in a chronological order.

Resolution:

Fixed.

Incorrect Digital Output When Analog Output is Enabled in Clampex Software

ST-281

In Clampex Software, enabling digital output in combination with multiple analog outputs, causes the digital output signal to malfunction.

Resolution:

Fixed.

Column Arithmetic is Broken in Clampfit Software

ST-282

In Clampfit Software, Column Arithmetic expressions cause an error message that the list of columns on the variable 'CB' is not properly formatted.

Resolution:

Fixed.

Double-clicking a data file does not open it in Clampfit Software

ST-285

Double-clicking a data file does not open it in Clampfit Software.

Resolution:

Fixed.

Low Pass Gaussian 1000Hz Filter Sometimes Crashes Clampfit Software

ST-286

In Clampfit Software, the software crashes using the Low Pass Gaussian 1000Hz filter with certain data files.

Resolution:

Fixed.

The Link for Action Potential Search in Clampfit Software Help is Broken

ST-288

In the Clampfit Software Help file, the link for Action Potential Search in the Event Detection Menu topic is broken.

Resolution:

Fixed.

Quick Graph Printing Problem in Clampfit Software

ST-289

In Clampfit Software, printing a Quick Graph page has an unwanted gridded background.

Resolution:

Fixed.

Wrong Link for Action Potential Search Window Help Button in Clampfit Software

ST-290

In Clampfit Software, the Action Potential Search Window Help button links to the wrong page.

Resolution:

Fixed.

Clampfit Software Graph Axes Titles are Distorted

ST-291

In Clampfit Software, the titles for the x and y axes are distorted.

Resolution:

Fixed.

Clampfit Software Batch Analysis Normalized Column Plots Missing in Dataset Results

ST-292

In Clampfit Software Batch Analysis, the option to plot normalize columns exists in the Analysis Results tab, but is missing in the Dataset Results tab.

Resolution:

Fixed.

Incorrect IV Graph Plotting in the Clampfit Software Batch Analysis Dataset Analysis

ST-293

In Clampfit Software Batch Analysis, the IV graph plotting of multiple trials adds incorrect lines in the graphs.

Resolution:

Fixed.

Error Exporting Clampfit Software Indexed data Files

ST-297

In Clampfit Software, exporting indexed data files causes an error.

Resolution:

Fixed.

Chapter 2: pCLAMP Software Version 11.0.3 Release Notes

The version 11.0.3 update is a minor release. Included are a summary and details of the changes incorporated in this revision as compared to version 11.0.2, the last general release of the software.

The following topics are included in this chapter:

- pCLAMP Software Version 11.0.3 Summary
- Modifications Made in pCLAMP Software v11.0.3

For computer requirements, software update instructions, and other related details, see pCLAMP Software General Information on page 27.

pCLAMP Software Version 11.0.3 Summary

The version 11.0.3 update incorporates the following changes:

Tracking ID	Status	Functional Area	Description
ST-253	Modified	Clampfit Software	Removed Software License Protection Key Requirement for Clampfit Software Standard Version

Modifications Made in pCLAMP Software v11.0.3

The following modifications were made in version 11.0.3.

Removed Software License Protection Key Requirement for Clampfit Software Standard Version

ST-253

The Clampfit Software Standard version runs without the installation of a USB dongle.

Chapter 3: pCLAMP Software Version 11.0.2 Release Notes

The version 11.0.2 update is a minor release. Included are a summary and details of the changes incorporated in this revision as compared to version 11.0.1, the last general release of the software.

The following topics are included in this chapter:

For computer requirements, software update instructions, and other related details, see pCLAMP Software General Information on page 27.

pCLAMP Software Version 11.0.2 Summary

The version 11.0.2 update incorporates the following changes:

Tracking ID	Status	Functional Area	Description
ST-233	Modified	Clampfit Software	Measurement of Cumulative Mean Frequency Per Sweep in Action Potential Search
ST-234	Modified	Clampfit Software	Measurements of Maximum Rise and Maximum Decay Slope in Action Potential Search
ST-235	Modified	Clampfit Software	Measurements of Maximum Rise and Maximum Decay Slope in Population Spike Search
ST-251	Modified	Clampfit Software	Measurements of Number of Action Potentials Per Sweep in Action Potential Search
ST-226	Fixed	Clampex Software	Disabling Membrane Test Channel OUT0 Causes Clampex Software to Crash
ST-227	Fixed	Clampfit Software	Importing a .CSV File or a Text File in Clampfit Software Causes a Crash
ST-228	Fixed	Clampfit Software	Error When Opening a Stimulus File in Episodic Stimulation
ST-229	Fixed	Clampex Software	Deselecting a User List Check Box Causes Clampex Software to Crash
ST-230	Fixed	Digitizer	Inconsistent Digitizer START Input Trigger Behavior
ST-240	Fixed	Clampex Software	The Scope Window Fails to Open When Clampex Software is Started
ST-245	Fixed	Clampex Software	Incorrect Labels for Baseline Cursors in Clampex Software

Modifications Made in pCLAMP Software v11.0.2

The following modifications were made in version 11.0.2.

Measurement of Cumulative Mean Frequency Per Sweep in Action Potential Search

ST-233

In Clampfit Software Action Potential Search, a new option is added to measure the cumulative mean frequency of traces per sweep.

Measurements of Maximum Rise and Maximum Decay Slope in Action Potential Search

ST-234

In Clampfit Software Action Potential Search, a new option is added to measure maximum rise and decay slopes.

Measurements of Maximum Rise and Maximum Decay Slope in Population Spike Search

ST-235

In Clampfit Software Population Spike Search, a new option is added to measure maximum rise and decay slopes.

Measurements of Number of Action Potentials Per Sweep in Action Potential Search

ST-251

In Clampfit Software Action Potential Search, a new option is added to measure the number of action potentials per sweep.

Issues Addressed in pCLAMP Software v11.0.2

The following issues were addressed in version 11.0.2. Unless otherwise noted, the fixes have no impact on current workflow or data.

Disabling Membrane Test Channel OUT0 Causes Clampex Software to Crash

ST-226

In Clampex Software , if you disable the membrane test channel OUT0 without enabling other OUT channels, the software crashes.

Resolution:

Fixed.

Importing a .CSV File or a Text File in Clampfit Software Causes a Crash

ST-227

In Clampfit Software , if you select to import a .csv file or text file, the software crashes.

Resolution:

Fixed.

Error When Opening a Stimulus File in Episodic Stimulation

ST-228

In Clampex Software Episodic Stimulation, when you select a stimulus file for analog waveform, the software displays an error.

Resolution:

Fixed.

Deselecting a User List Check Box Causes Clampex Software to Crash

ST-229

In Clampex Software, in Protocol Editor >Stimulus, when the User List check box is selected and then deselected, the software crashes.

Resolution:

Fixed.

Inconsistent Digitizer START Input Trigger Behavior

ST-230

When the protocol is set to use a digitizer START input trigger, if the source digitizer was previously run, the recording is triggered immediately.

Resolution:

Fixed.

The Scope Window Fails to Open When Clampex Software is Started

ST-240

If the software is upgraded from an older version, the Scope window may not open when Clampex Software starts.

Resolution:

Fixed.

Incorrect Labels for Baseline Cursors in Clampex Software

ST-245

In Protocol Editor > Statistics, when Shape Statistics is enabled, instead of a pair of cursors B, a pair of cursors 17 appear.

Resolution:

Fixed.

Chapter 4: pCLAMP Software Version 11.0.1 Release Notes

The version 11.0.1 update is a minor release. Included are a summary and details of the changes incorporated in this revision as compared to version 11.0, the last general release of the software.

The following topics are included in this chapter:

For computer requirements, software update instructions, and other related details, see pCLAMP Software General Information on page 27.

pCLAMP Software Version 11.0.1 Summary

The version 11.0.1 update incorporates the following changes:

Tracking ID	Status	Functional Area	Description
ST-188	Modified	Clampfit Software	Auto-fit Columns in Analysis Results and Dataset Results
ST-185	Fixed	Clampfit Software	Save Search Protocol Fails Unless the Analysis Window is in Focus
ST-195	Fixed	Clampfit Software	Saving the Search Protocols for Action Potential and Pop Spike Analysis Fails
ST-197	Fixed	Clampex Software	Voice Tag Broken
ST-198	Fixed	Clampfit Software	Setting Noise Rejection on a Noisy Signal Intermittently Causes Clampfit Software to Crash
ST-199	Fixed	Clampfit Software	Intermittent Crash with Column Curve Fit in Batch Analysis
ST-202	Fixed	Clampfit Software	Noise Rejection Only Uses the Top Measurement Unit for the Signal
ST-205	Fixed	Clampex Software	Changing Recording Threshold for Voice tag Causes Crash
ST-213	Fixed	Clampex Software	When Gain Value is Changed, Membrane Test Switches to Bath
ST-214	Fixed	Clampex Software	Random Crashes in Membrane Test
ST-217	Fixed	Clampex Software	Frequency Setting in Membrane Test Is Incorrect
ST-218	Fixed	Clampex Software	Moving the Trigger-Line Causes Crash

Modifications Made in pCLAMP Software v11.0.1

The following modifications were made in version 11.0.1.

Auto-fit Columns in Analysis Results and Dataset Results

ST-188

In Clampfit Software Batch Analysis, the column width for Analysis Results and Dataset Results automatically adjusts according to the length of the output values.

Issues Addressed in pCLAMP Software v11.0.1

The following issues were addressed in version 11.0.1 .Unless otherwise noted, the fixes have no impact on current workflow or data.

Save Search Protocol Fails Unless the Analysis Window is in Focus

ST-185

In Clampfit Software, if the Analysis window is not in focus, saving the search protocol fails.

Resolution:

Fixed.

Saving the Search Protocols for Action Potential and Pop Spike Analysis Fails

ST-195

In Clampfit Software, in Action Potential and Pop Spike Analysis, saving the search protocol fails.

Resolution:

Fixed.

Voice Tag Broken

ST-197

In Clampex Software, trying to add a voice tag displays an error.

Resolution:

Fixed.

Setting Noise Rejection on a Noisy Signal Intermittently Causes Clampfit Software to Crash

ST-198

In Clampfit Software, in Event Detection, when the signal is noisy and noise rejection is selected, the software sometimes crashes.

Resolution:

Fixed.

Intermittent Crash with Column Curve Fit in Batch Analysis

ST-199

In Clampfit Software Batch Analysis, running Column Curve Fit, intermittently crashes.

Resolution:

Fixed.

Noise Rejection Only Uses the Top Measurement Unit for the Signal

ST-202

In Clampfit Software, files containing data from multiple IN channels, when the noise rejection is selected, the measurement unit is always from the first signal, regardless which signal is selected or in focus.

Resolution:

Fixed.

Changing Recording Threshold for Voice tag Causes Crash

ST-205

In Clampex Software, on Windows 7, changing the voice recording threshold causes a crash.

Resolution:

Fixed.

When Gain Value is Changed, Membrane Test Switches to Bath

ST-213

While Clampex Software is telegraphed through Axopatch 200B Capacitor Feedback Patch Clamp Amplifier, and Membrane test is set to Cell or Patch stage, when the gain is changed, the stage changes to Bath.

Resolution:

Fixed.

Random Crashes in Membrane Test

ST-214

In Clampex Software, running Membrane Test on Windows 10 intermittently crashes.

Resolution:

Fixed.

Frequency Setting in Membrane Test Is Incorrect

ST-217

In Clampex Software, in Membrane Test, when the frequency is changed to a different value, the same value is applied to all stages (Cell, Bath, and Patch), but the software shows different values for each stage.

Resolution:

Fixed.

Moving the Trigger-Line Causes Crash

ST-218

In Clampex Software, on Windows 10, in Fixed-Length, Variable Length, or High-speed Oscilloscope Acquisition mode, moving the trigger line causes a crash.

Resolution:

Fixed.

Chapter 5: pCLAMP Software Version 11.0 Release Notes

The version 11.0 update is a major release. Included are a summary and details of the changes incorporated in this revision as compared to version 10.7, the last general release of the software.

The following topics are included in this chapter:

For computer requirements, software update instructions, and other related details, see pCLAMP Software General Information on page 27.

pCLAMP Software Version 11.0 Summary

The version 11.0 update incorporates the following changes:

Tracking ID	Status	Functional Area	Description
ST-2	New	Clampfit Software	Automated Event Detection
ST-3	New	Clampfit Software	Action Potential Analysis
ST-4	New	Clampfit Software	Population Spike Analysis
ST-68	New	Clampfit Software	Batch Analysis
ST-1	Modified	Clampex Software	More Epoch Columns in Protocol Editor
ST-10	Modified	Clampex Software	Pre-Program Gap-Free Mode Output
ST-11	Modified	Clampfit Software	More Analysis Cursor Pairs
ST-13	Modified	Clampex Software	Membrane Test on Multiple Channels Displays in One Window
ST-219	Modified	Clampfit Software	Clampfit Software Requires License Key Dongle
	Modified	pCLAMP Software	No MiniDigi 2-Channel Digitizer Model 1A Support
ST-188	Known	Clampfit Software	In Clampfit Batch Analysis, In Analysis Results, Column Width Can Hide Values

New in pCLAMP Software v11.0

The following new features are included in version 11.0.

Automated Event Detection

ST-2

In Clampfit Software is able to identify events based on a user defined and learned template event, and identify similar events in the data file.

Action Potential Analysis

ST-3

In Clampfit Software in **Event Detection**,the **Action Potential Search** option searches for measurements and enables you to adjust baselines and select measurements such as amplitude, action potential, action potential duration, peak to peak frequency and time, and threshold potential.

Population Spike Analysis

ST-4

In Clampfit Software in **Event Detection**,the **Population Spike Search** option can automatically determine the baseline, Z height, and the area under curve analysis. Adjust parameters manually as needed.

Batch Analysis

ST-68

In Clampfit Software, use **Batch Analysis** functionality when you acquire multiple trials using the same protocol in Clampex Software and want to calculate measurements and generate a graph using the collective dataset.

Modifications Made in pCLAMP Software v11.0

The following modifications were made in version 11.0.

No MiniDigi 2-Channel Digitizer Model 1A Support

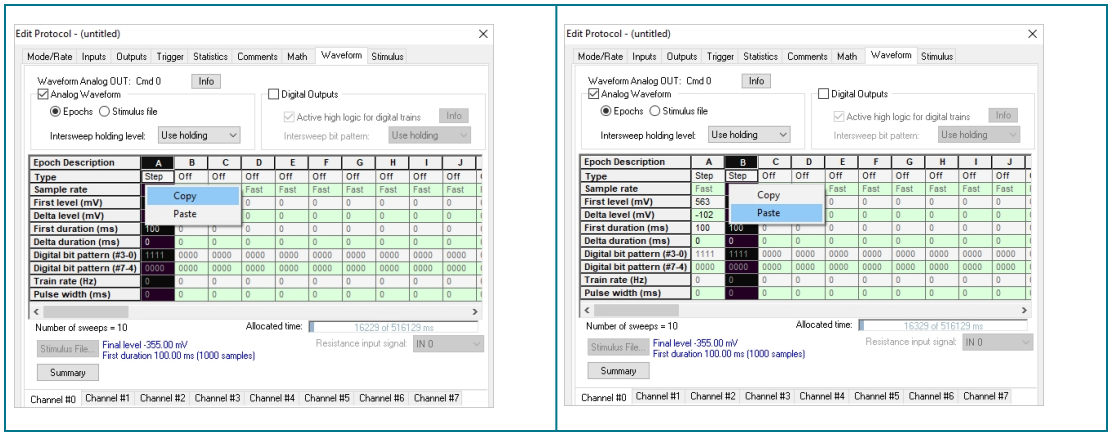
pCLAMP Software Version 11.0 does not support the MiniDigi Model 1A Digitizer. Contact Molecular Devices Technical Support for a replacement.

More Epoch Columns in Protocol Editor

ST-1

In Clampex Software, in the Protocol Editor, in Episodic Stimulation mode, in the Waveform tab, the number of voltage segments increases from 10 epochs to 50 epochs. The sweep duration and acquired samples are increased in the Clampex Software version 11.0. For example, the sweep duration can be set to 516.129 seconds at 10 kHz sampling rate.

The Epoch Description table in the Waveform tab now includes copy and paste functionality.



Pre-Program Gap-Free Mode Output

ST-10

In Clampex Software, when you use **Gap-free** mode in the **Real Time Controls** panel, open the pre-programming dialog by clicking the **>** button.You can pre-program voltage level and holding duration values for each channel, as well as turning the digital bit on or off. You can pre-program up to 50 epochs. You can also manually change values during a recording.

More Analysis Cursor Pairs

ST-11

In Clampfit Software, up to 25 Cursor Pairs can be used in the Analysis window.

Membrane Test on Multiple Channels Displays in One Window

ST-13

In Clampex Software, a membrane test with multiple channels displays data for all channels in one window simultaneously. Independent voltage output at different stage configurations enable in each recorded cell.

Clampfit Software Requires License Key Dongle

ST-219

The Clampfit Software license now requires a USB dongle to run. Clampfit Software is disabled if the USB dongle is not installed.

Known Issues in pCLAMP Software v11.0

The following are known issues in version 11.0.

In Clampfit Batch Analysis, In Analysis Results, Column Width Can Hide Values

ST-188

In Batch Analysis, in Analysis Results, the column width might be too narrow and measurement values might not show entirely.

Workaround:

Manually adjust the column width to view the whole measurement value.

Chapter 6: pCLAMP Software General Information

The pCLAMP Software controls the Digidata® Low-Noise Data Acquisition System instruments. pCLAMP Software Version 11.1 is the latest version of the standard for electrophysiological experimentation and analysis software. The flexibility that pCLAMP Software offers allows researchers to adapt it to many uses outside its traditional applications in electrophysiology.

The pCLAMP Software Version 11.1 suite consists of:

- Clampex Software, for data acquisition and production of stimulus waveforms.
- Clampfit Software, for data analysis.
- AxoScope Software, for passive recording.

Clampex Software is a versatile and powerful software tool for acquiring digitized data of all types. While excellent for the acquisition of patch-clamp data, it is not limited to measuring voltage- or current-clamp responses. Clampex Software can be used to measure any physical parameter that can be converted to a voltage within +/- 10V.

Clampfit Software is powerful data analysis software with a wide variety of statistics, analyses, transforms and layout tools for electrophysiological data.

Together, AxoScope Software and a digitizer provide the functionality historically performed by a separate chart recorder, for example, for concurrent background recording.

The following topics are included in this chapter:

Computer System Requirements

The pCLAMP Software requires the following computer specifications:

Table 6-1: Computer System Requirements

Item	Description
Operating system	Windows 10, 64-bit Windows 7, 32-bit and 64-bit
Memory	4 GB RAM or more
Display	1920 x 1080 display or higher
USB ports	3 USB 2.0 ports

Software License Protection Keys

A software protection “key” device, commonly known as a “dongle”, enables your software for use. The provided key is a small USB device that plugs into your computer USB port. The type of USB key you are provided corresponds to the purchased software license. The available software license packages that require USB keys, include:

- pCLAMP Standard—includes Clampex Software (1 dongle)
- pCLAMP Advanced—includes Clampex Software and Advanced Clampfit Software (2 dongles)
- Clampfit Software Advanced Only—includes Advanced Clampfit Software (1 dongle)

Table 6-2: Identifying USB License Key Dongles

Software	Dongle Color	Part Number	
Clampex	Black	5060221	
Advanced Clampfit	White	5060223	

If the key is not installed, Clampex Software runs in Demo mode only, restricting you to simulated data, if the key is not installed.

Digitizer Requirements

pCLAMP Software Version 11.1 supports theDigidata® 1440A Low-Noise Data Acquisition System and newer digitizers.

Installing the Software

Before starting the pCLAMP Software installer, exit all other Windows programs, especially anti-virus software.

Windows 7/10

Clampex Software Version 11.1 runs under Windows 7 and Windows 10 (32- and 64-bit), for the Pro, Enterprise and Ultimate editions. The Home edition is not supported. The **pCLAMP Setup** program automatically detects which operating system is running and loads the correct files.

Note: A Windows 10 (32-bit or 64-bit) operating system is recommended.

First Time Installation

All digitizers must be disconnected from your computer during the software installation.

To install the pCLAMP Software suite for the first time:

1. Run the **Setup pCLAMP** program and follow the on-screen instructions.
2. In the **Destination Folder** dialog, you can change the destination drive and directory where pCLAMP Software is installed.

   The amount of hard disk space required for this installation and the amount of space available on the hard disk are displayed. The default Molecular Devices Program Folder is created and program icons are added to it. You can rename the Program Folder or select one of the existing folders. Setup will then copy the pCLAMP Software files to the computer.
3. For Clampex Software to run properly, you might need to restart the computer.

Updating the Software

All digitizers must be disconnected from your computer during the software installation.

To install the pCLAMP Software suite update:

1. Uninstall your older version of Clampex Software or AxoScope Software using **Start > Control Panel > Programs > Uninstall a program**.
2. Install pCLAMP Software version 11.1, and then connect the digitizer.
3. Go to the **Start** menu and in the **Search** field type **DEVICE MANAGER**.
4. In the **Device Manager** dialog, under **Jungo Connectivity**, double-click your digitizer model number.
5. In the digitizer **Properties** dialog, from the **Driver** tab, click **Update Driver**.
6. When prompted, select **Search automatically for updated driver software**.

7. After the driver installs, verify that the new **Driver Date** is *5/16/2016* and the new **Driver Version** is *12.1.0.0*.

Uninstalling the Software

This procedure works similarly for previously installed AxoScope Software and pCLAMP Software. The file locations are similar, but the folders are identified by a different version number.

To uninstall the software:

1. Go to Windows **Start > All Programs >Molecular Devices**.
2. Open the folder for the software version to be uninstalled, such as **pCLAMP 10.7**.
3. Select the version-appropriate Uninstall file, such as **Uninstall pCLAMP 10.7 Software**.
4. Follow the procedures on-screen to finish uninstalling the software.

File Locations

File locations depend on the software version.

- **pCLAMP Software Version 11.x:**

  User-related files, such as data and parameter files, are stored in their own folders in:

  \Documents and Settings\[user name]\My Documents\Molecular Devices\pCLAMP\…

- **pCLAMP Software Versions 10.3 through 10.7:**

  System-related files, such as for the Lab Bench, System Lab Book, and user-defined telegraphs, are stored in the hidden folder:

  C:\ProgramData\Molecular Devices\pCLAMP

  Program application files are stored by default in the folder:

  C:\Program Files\Molecular Devices\pCLAMP 10.7

- **pCLAMP Software Version 10.2 and earlier:**

  Program application files and system-related files, such as for the Lab Bench, System Lab Book, and user-defined telegraphs, are stored in:

  C:\Axon\pCLAMP X

Configuring MDC File Server

Note: The following procedure is for Advanced Analysis Clampfit Software only, which includes the Batch Analysis functionality. To run Advanced Analysis Clampfit Software, you must have the Advanced Analysis Clampfit Software USB dongle installed on you computer.

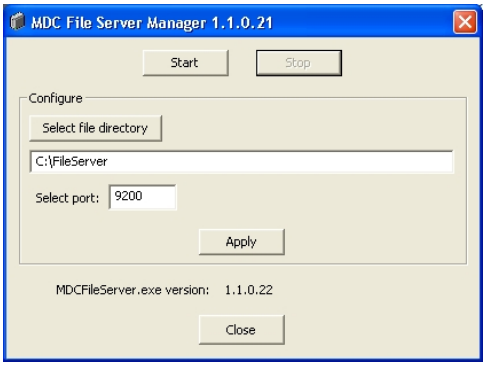
The MDC File Server runs on Windows 7 and 10 computer operating systems. The computer it runs on requires enough hard drive space to store your data files. The storage location can be changed if it becomes full, and the database keeps track of data files in multiple storage locations. If you set a new storage location, keep the existing data storage location.

Before starting Clampfit Software to run Batch Analysis the first time, you must first configure MDC File Server. MDC File Server is required for managing imported data. It runs quietly in the background while you use Batch Analysis. MDC File Server must be running for Clampfit Software Batch Analysis to run.

To configure MDC File Server:

1. After you install the pCLAMP Software,open the MDC File Server Manager from Start > All Programs > Molecular Devices > MDC File Server > MDC File Server, right-click and Run as administrator.
2. In the MDC File Server Manager dialog, click Select file directory to open a Browse dialog to select the folder where you want to store data files.

   CAUTION! If you select a computer other than the local one, you must have access permissions to the folder location at all times.

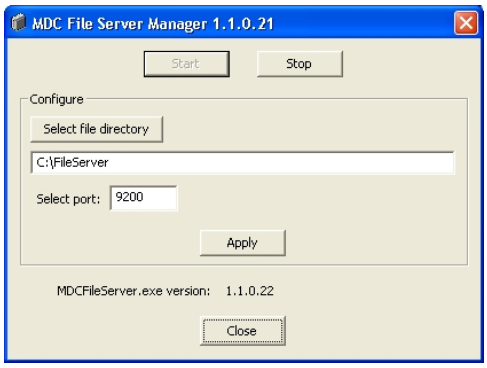


3. Click **Create new folder**, type the name **FILESERVER**, and click **OK**.

   Tip: You can name the new folder something other than **FILESERVER** if needed.

4. In the **Select port** field, type **9200**, and click **Apply**.
5. Click the **Start** button and wait for the **Start** button to disable.

6. When the **Start** button is inactive, click **Close**.



Resetting Software Defaults

The **Start > All Programs > Molecular Devices> pCLAMP 11** folder contains the utility **Reset to Program Defaults**, which resets pCLAMP Software settings back to their default values. This is useful when you feel that you have diverged from the normal setup to a point beyond your control, and you would like to return to the factory defaults.

Note: Settings for other programs might be displayed in the list of registry items—select the item(s) relevant to your situation.

Obtaining Support

Molecular Devices is a leading worldwide manufacturer and distributor of analytical instrumentation, software, and reagents. We are committed to the quality of our products and to fully supporting our customers with the highest level of technical service.

Our Support website, www.moleculardevices.com/service-support, has a link to the Knowledge Base, which contains technical notes, software upgrades, safety data sheets, and other resources. If you still need assistance after consulting the Knowledge Base, you can submit a request to Molecular Devices Technical Support.

Please have your instrument serial number or Work Order number, and your software version number available when you call.

WARNING! BIOHAZARD. It is your responsibility to decontaminate components of the instrument before you return parts to Molecular Devices for repair. Molecular Devices does not accept items that have not been decontaminated where it is applicable to do so. If parts are returned, they must be enclosed in a sealed plastic bag stating that the contents are safe to handle and are not contaminated.

Contact Us

Phone: +1-800-635-5577
Web: moleculardevices.com
Email: info@moldev.com

Visit our website for a current listing of worldwide distributors.