

WaveForms Getting Started Guide



Overview

WaveForms is the virtual instrument suite for Digilent Test and Measurement devices. It configures, calibrates, and controls the devices' various Instruments. (<https://digilent.com/reference/test-and-measurement/start>)

Go to the WaveForms Resource Center and download the latest version of WaveForms. (<https://digilent.com/reference/software/waveforms/waveforms-3/start>)

Guide

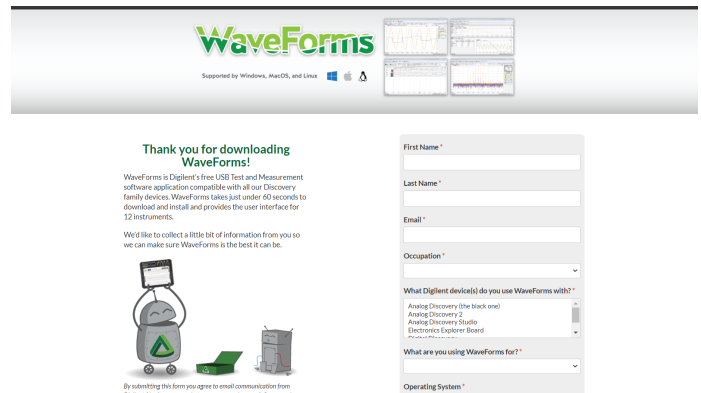
Download and Install Waveforms

Windows

Installing WaveForms : Windows

Open the Executable File

Open the executable file that you downloaded.



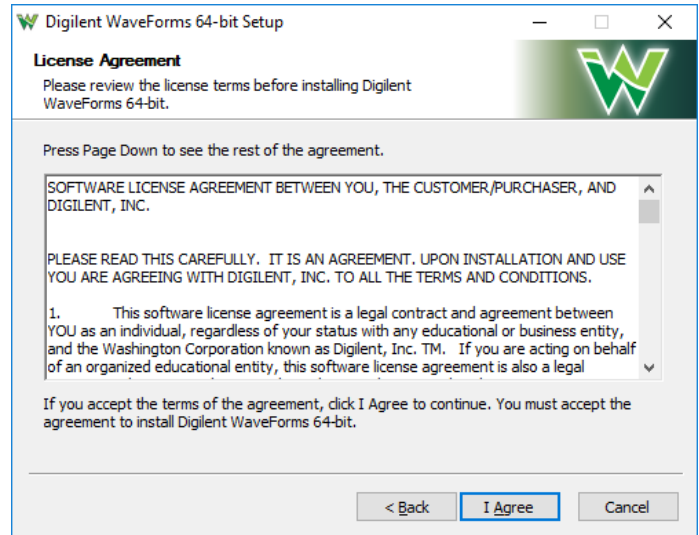
Welcome

Launch the WaveForms installer, by clicking on it in the Downloads folder. Upon launching the WaveForms installer, the welcome page will be seen. Click **Next**.



License Agreement

Read the license agreement on this screen, then, if in agreement to it, click **I Agree** to continue.

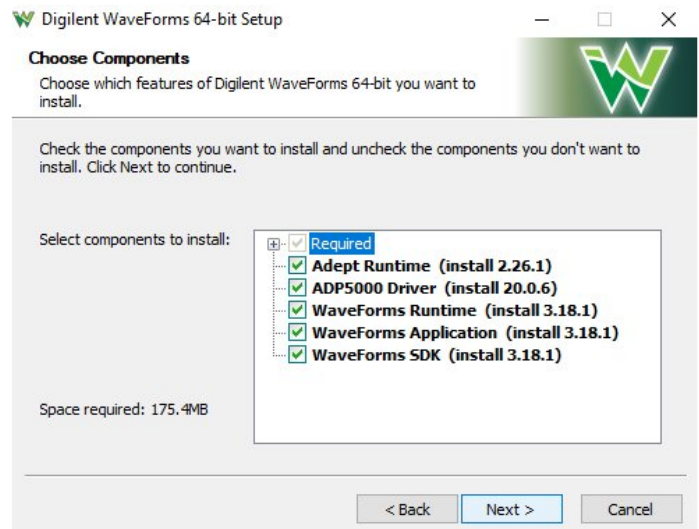


Choose Components

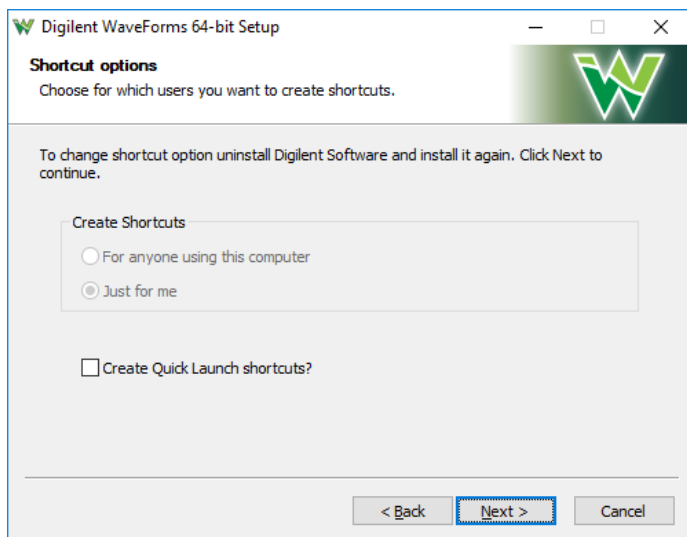
In the “Choose Components” screen, a list is presented of each of the things that can be installed. In order to use your Test and Measurement device with the WaveForms application, the Adept Runtime, WaveForms Runtime, and WaveForms Application are required.

- The Adept Runtime allows WaveForms to communicate with Digilent Test and Measurement devices.
- The WaveForms Runtime contains a library and device support files needed to run custom applications.
- The WaveForms Application is the Digilent virtual instrumentation interface.
- The WaveForms SDK is the software development kit for creating custom applications.
- If you have an ADP5250, make sure to check the box for its driver installation, to ensure that your PC will be able to communicate with the device.

Note: *Even with all components selected, the WaveForms install does not take much hard drive space (<200MB). Digilent recommends that all components are installed.*



(https://digilent.com/reference/_detail/software/waveforms/waveforms-3/newinstall.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

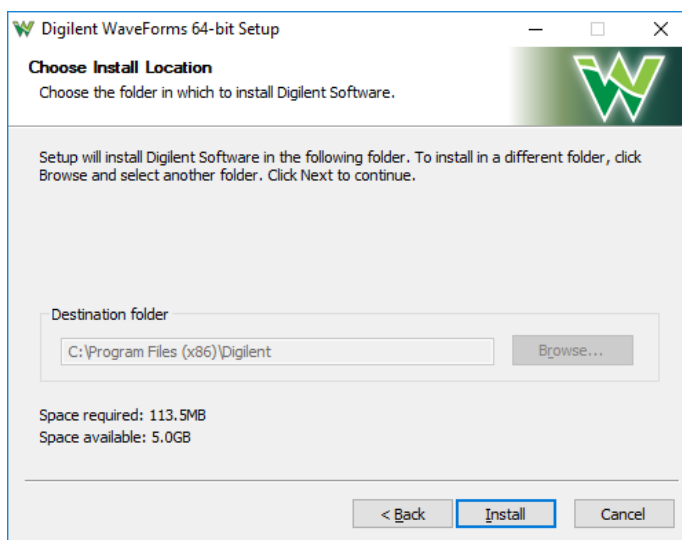


Shortcut Options

Click Next.

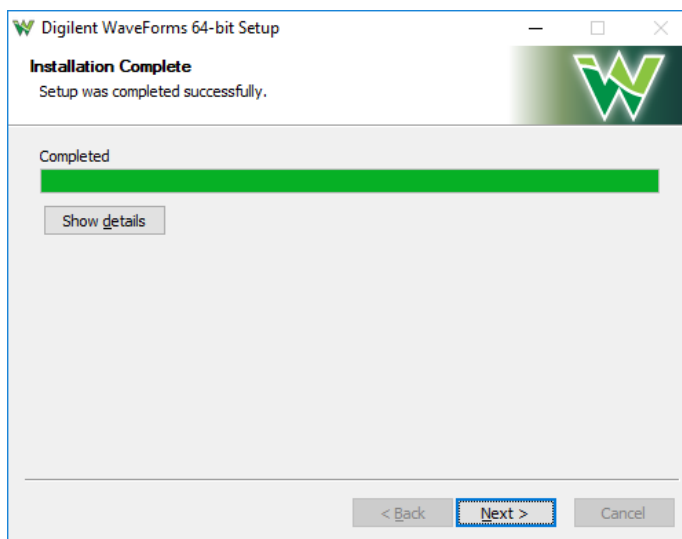
Choose Install Location

- You'll need to choose an installation destination or just leave it at the default.
- Click "Install".



Installing / Installation Complete

- WaveForms will be installed as indicated by the progress bar.
- Click "Next".



Complete

- Check or uncheck the boxes to open WaveForms and the readme.
- Click “Finish”.



Mac

Installing WaveForms : Mac

Download WaveForms

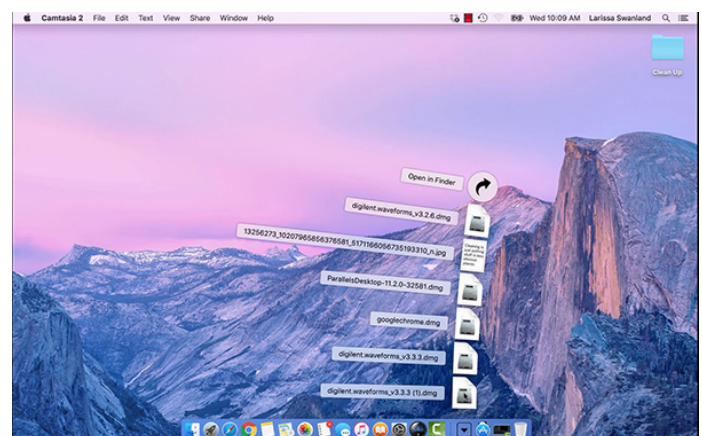
This tutorial will guide you through the steps involved in the installation process on Mac after downloading it.

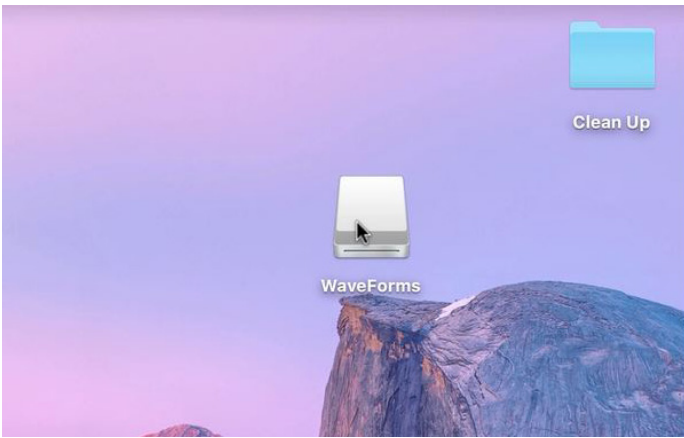
Analog Discovery 2 Quick-Start: Video1 - Unboxing and Software Download



<https://youtu.be/2nAvh28o-t4?si=xrwTasA7fv1Umbkw>

Expand your downloads and open the **.dmg** file that you have downloaded.

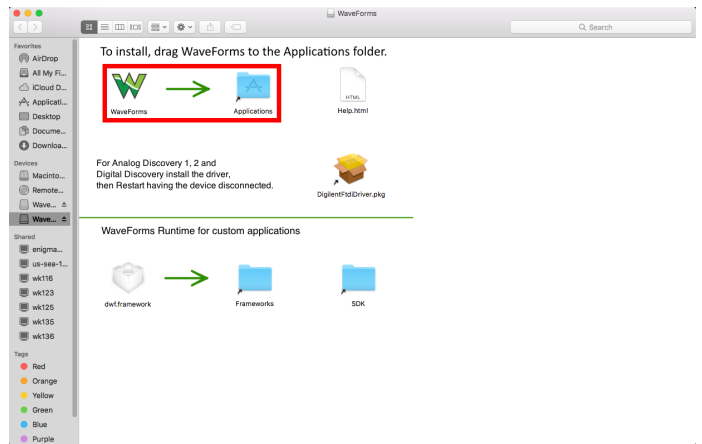





From the desktop, open the **WaveForms** drive.

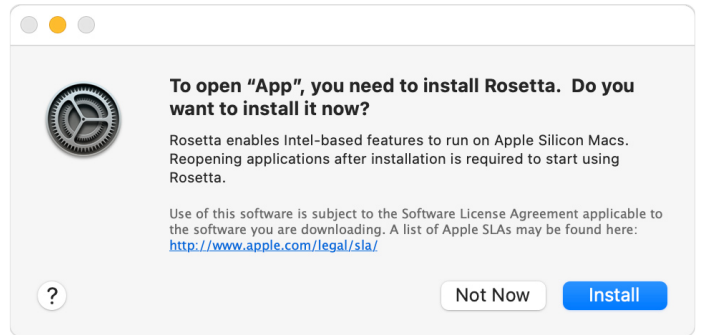
Drag the **WaveForms** icon into the **Applications** folder.
This will install the following components in Applications:

- **WaveForms Runtime** contains a library and device support files needed to run custom applications.
- **WaveForms Application** is the Digilent virtual instrumentation interface.
- **WaveForms SDK** is the software development kit for creating custom applications



Install and Run Rosetta: Only for a Mac with Apple Silicon

The WaveForms app has not yet been ported to run on Mac computers with Apple Silicon. Apple has provided a translation framework called  Rosetta2 (<https://support.apple.com/en-us/HT211861>) which allows programs like WaveForms that were written for Intel processors to run on Apple Silicon Macs. When you attempt to run WaveForms, you may be prompted to install Rosetta in order to open the app. Click install and enter your username and password to allow the installation process to proceed. Rosetta will then be ready to run the WaveForms application or any other software originally written for Intel processors.

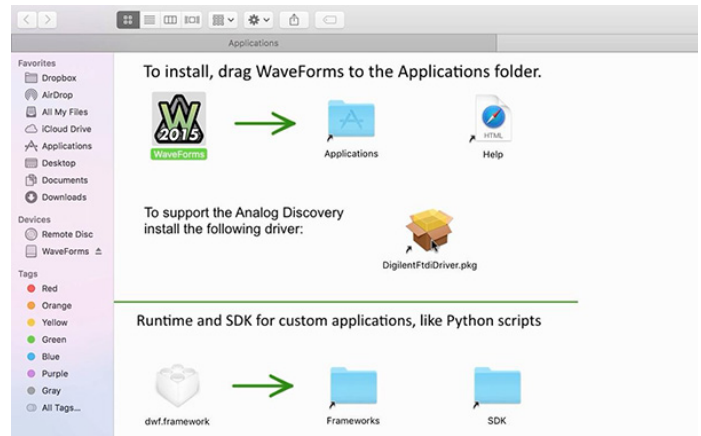


(https://digilent.com/reference/_detail/reference/software/waveforms/wav3/rosetta2.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Install Drivers : Only for OS-X 10.13 or earlier

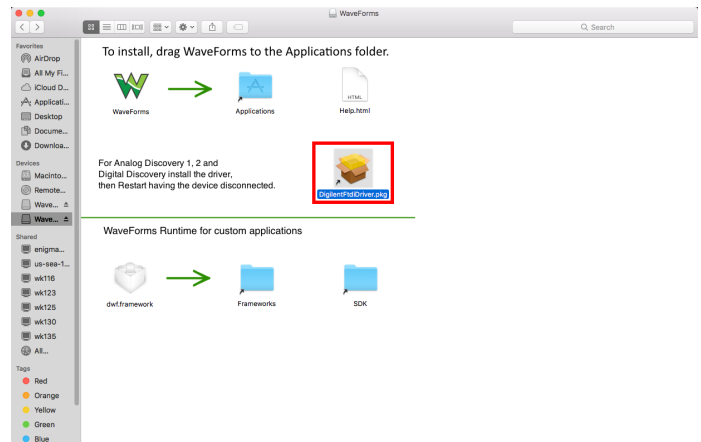
Double-click the FTDI driver icon to start the installation process. On MacOS (10.13) Sierra High and older versions, the device driver should be installed to support Analog Discovery 1 & 2 and Digital Discovery devices. On MacOS (10.14) Mojave, the device driver is not required.

According to some reports, on new MacBook machines the device is not detected if the driver is installed, so uninstall the driver if the device does not connect.

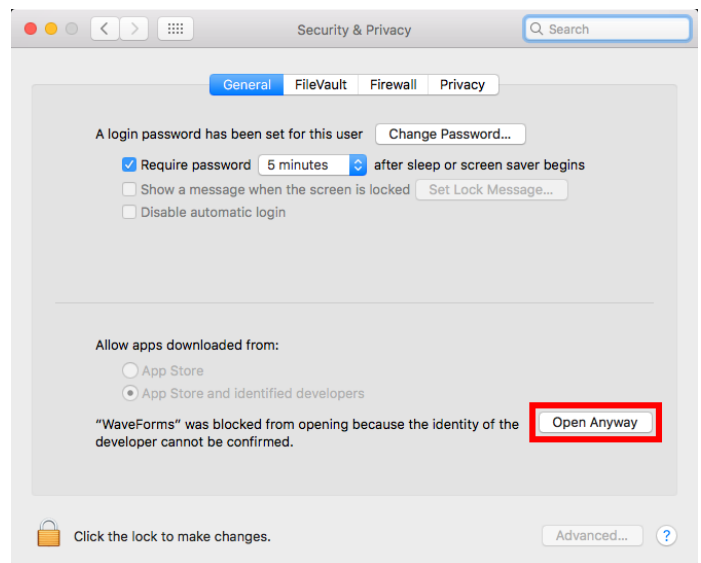


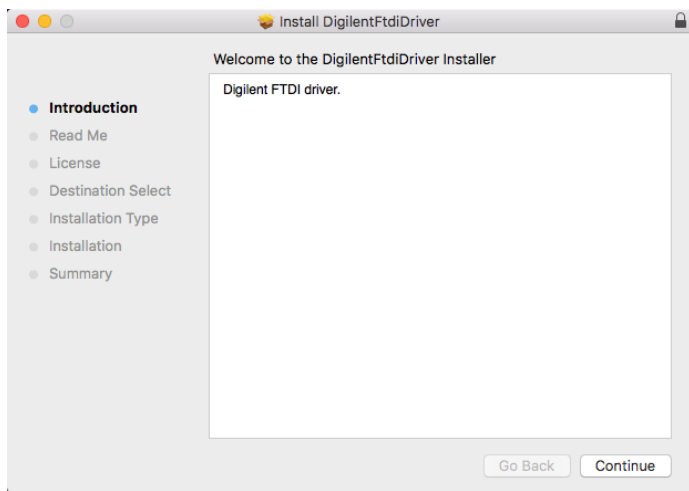
Launch Installer

Double click **DiligentFtdiDriver.pkg** to open the FTDI Driver Installer.



The OS may block the launch of the **driver installer**. If this is the case, go into the System Preferences' Security and Privacy page and click **Open Anyway**.



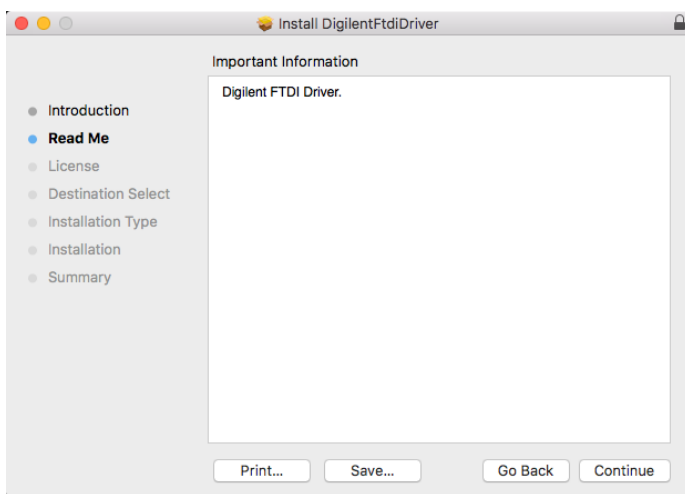


Introduction

Click **Continue**.

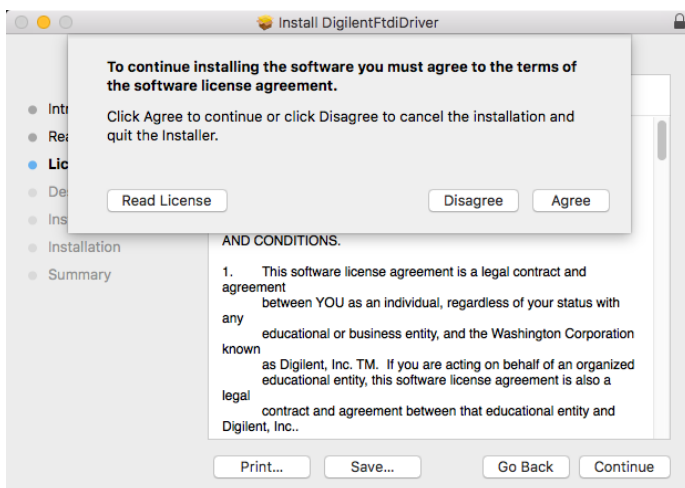
Read Me

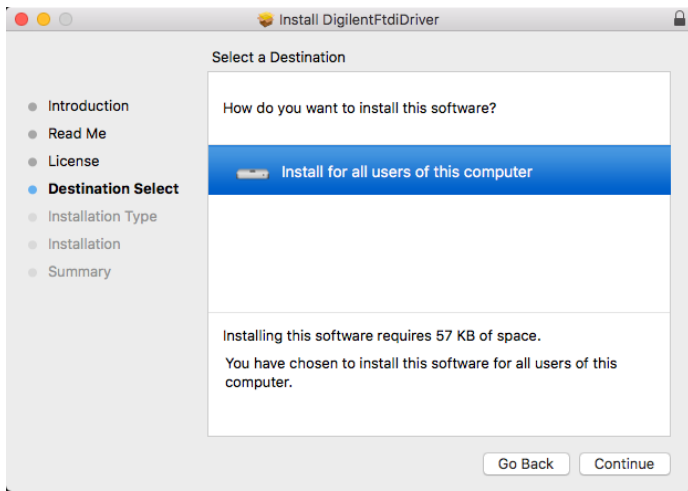
Click **Continue**.



License

Read the license, then if in agreement, click **Continue**, then click **Agree** in the popup.



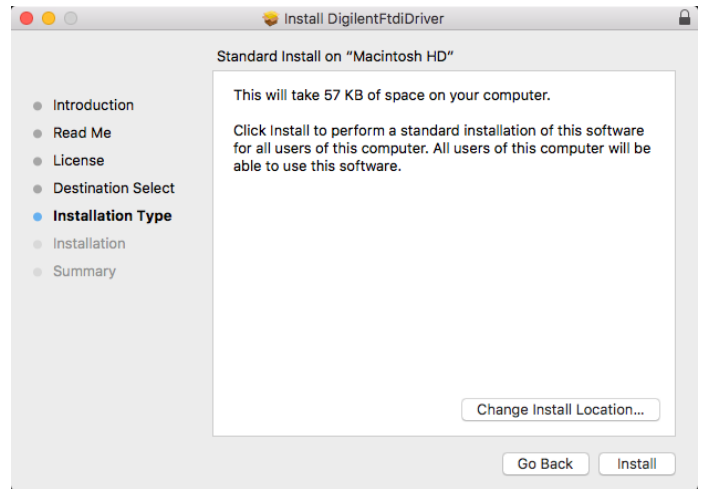


Destination Select

Pick the users to install the drivers for, then click **Continue**.

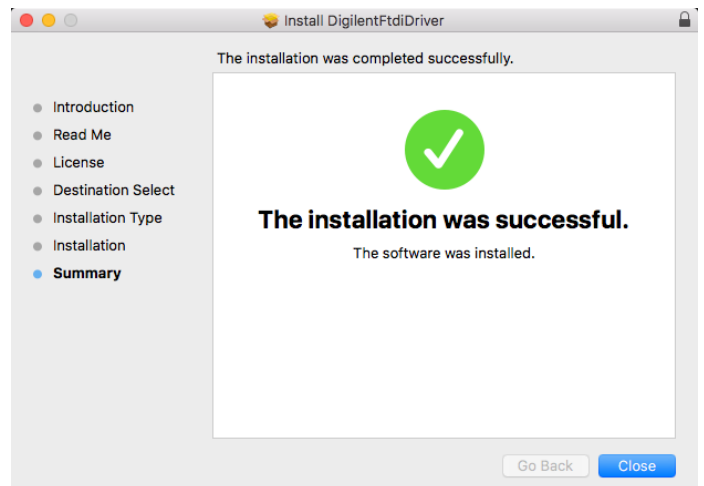
Installation Type

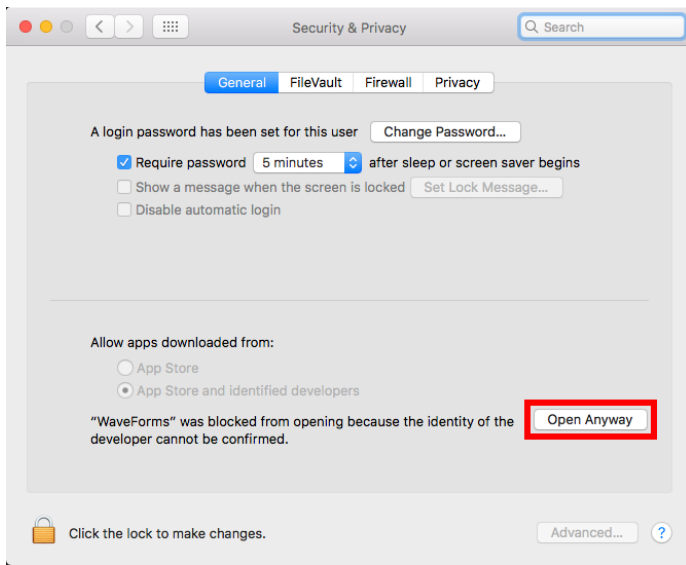
Click **Install**.



Summary

Once the installation has completed, click **Close**.





The OS () may block the launch of the **WaveForms** . If this is the case, go into the System Preferences' Security and Privacy page and click **Open Anyway**.

Linux

Installing WaveForms : Linux

Download WaveForms

This tutorial will guide you through the steps involved in the installation process on Linux after downloading it.

**Analog Discovery 2 Quick-Start: Video 2c
Installing WaveForms on Linux**



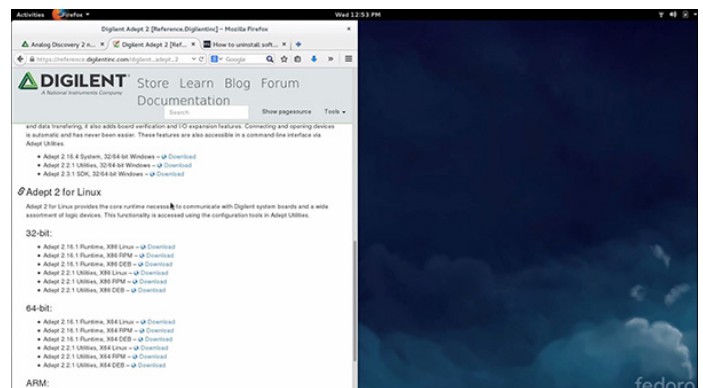
[https://youtu.be/uYc8-HwGNCA?
si=JdLSbuPn3I3gA7wf](https://youtu.be/uYc8-HwGNCA?si=JdLSbuPn3I3gA7wf)

First, download the package for the Adept Runtime. This program is required for WaveForms to connect to your device and must be installed prior to installing WaveForms.

For systems using **.deb packages**, (Ubuntu, Fedora, etc), use the built-in package manager to install the Adept Runtime and then WaveForms - typically, a package manager can be opened by double-clicking on the file in question.

Download Adept Runtime

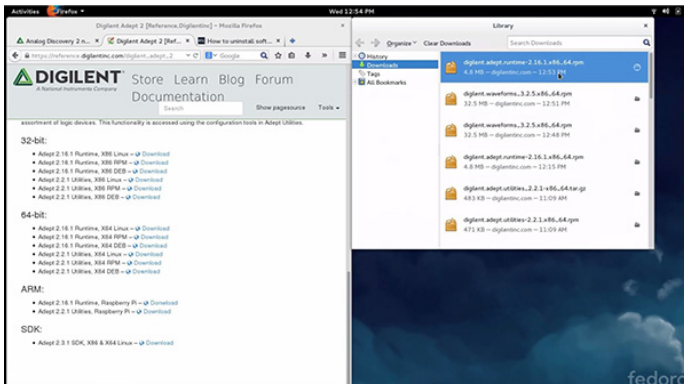
- Download the correct version of the Adept Runtime. All Adept downloads can be found here: [Adept's Product Catalog Entry \(https://cloud.digilent.com/myproducts/Adept?pc=1&tab=2\)](https://cloud.digilent.com/myproducts/Adept?pc=1&tab=2). Make sure to follow the link for **Adept Runtime Downloads**.
- Make sure the version of the Adept install file is the same as WaveForms. I used the 64-bit RPM for WaveForms so I will use the 64-bit RPM for Adept.



Install Files using built-in Package Manager

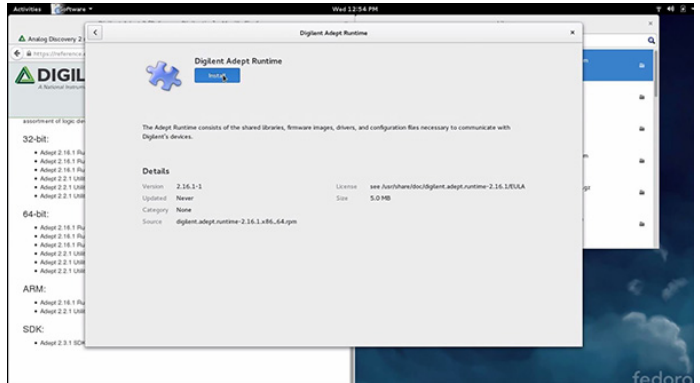
Open the Adept File

Open the file you downloaded for Adept in the previous step.



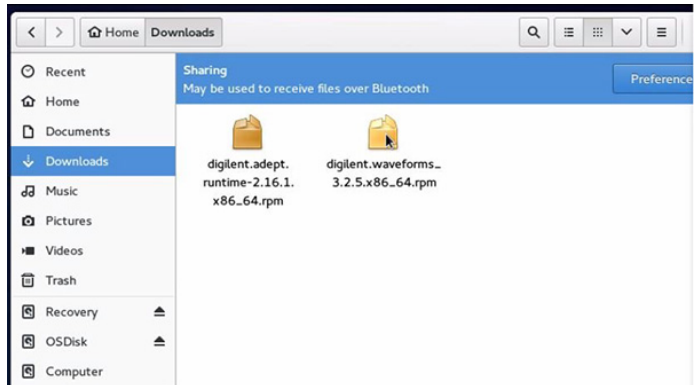
Click Install

Click “Install” on the window that pops up.



Open the WaveForms File

Open the file you downloaded to install WaveForms.

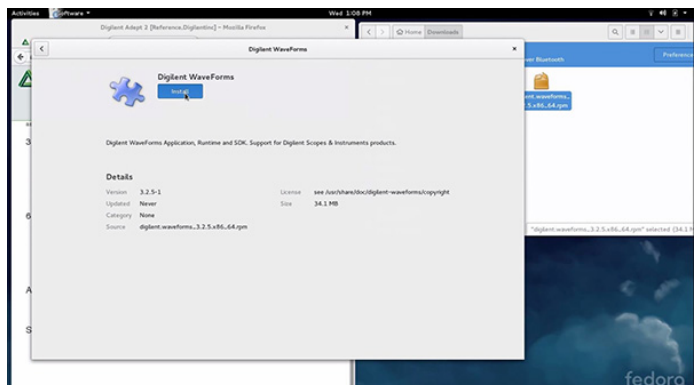


Click Install

Click Install in the window that pops up.

This will install the following components:

- **WaveForms Runtime** contains a library and device support files needed to run custom applications.
- **WaveForms Application** is the Digilent virtual instrumentation interface.
- **WaveForms SDK** is the software development kit for creating custom applications



Install Files using command line

Alternatively, use the following set of commands in the terminal to install the Adept Runtime and WaveForms from the downloaded packages:

```
sudo dpkg -i <path to Adept Runtime .deb file>
sudo dpkg -i <path to WaveForms .deb file>
sudo apt-get install -f
```

For systems using **.rpm packages**, (Red Hat Linux, etc), use the following set of commands in the terminal to install the Adept Runtime and WaveForms from the downloaded packages:

```
sudo rpm -i <path to Adept Runtime .rpm file>
sudo rpm -i <path to WaveForms .rpm file>
```

If WaveForms has already been installed on the system, replace the “-i” flag passed to the rpm command with “-U” to upgrade the existing installation.

For technical support with installing WaveForms on various Linux distributions, please visit the Test and Measurement section of the [Digilent Forum \(https://forum.digilent.com\)](https://forum.digilent.com).

Using WaveForms for the First Time

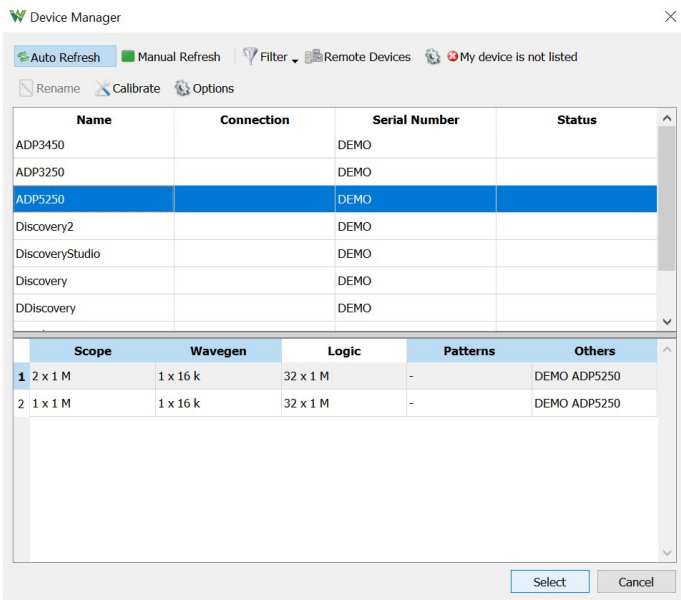
Windows

No Device Connected

When WaveForms initially opens, if you have no device plugged in it will give you a warning that no device was detected.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2waveforms2015-installation-windows/fbzv36l0o5enzj.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)



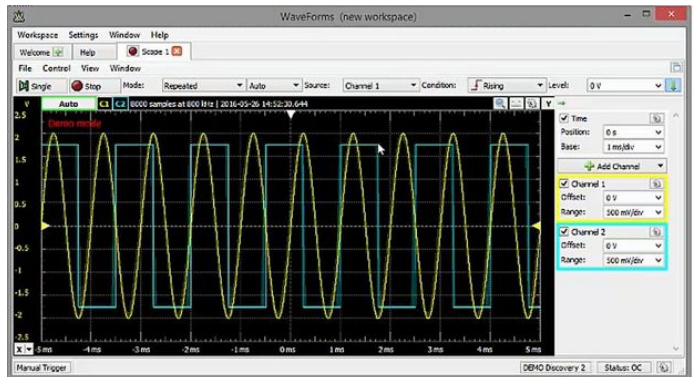
Run Demo Mode

That's okay, because WaveForms offers a demo mode where you can try out the features without having a compatible device.

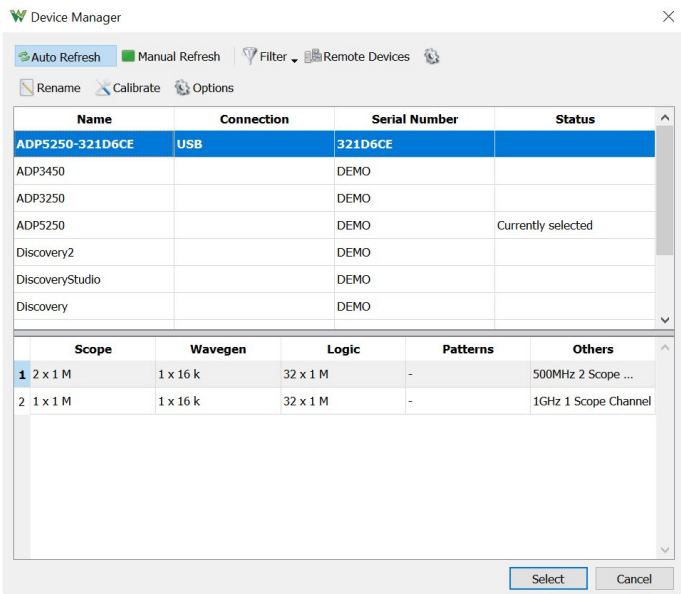
(https://digilent.com/reference/_detail/software/waveforms/waveforms-3/demo.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Oscilloscope in Demo Mode

For example, here is a demonstration of the oscilloscope scoping a square and sine wave.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2waveforms2015-installation-windows/fqxbtb1ioo5eo21.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)



Device Connected

When you plug in your Test and Measurement device it will appear on the device manager and you can then select it to connect to it.

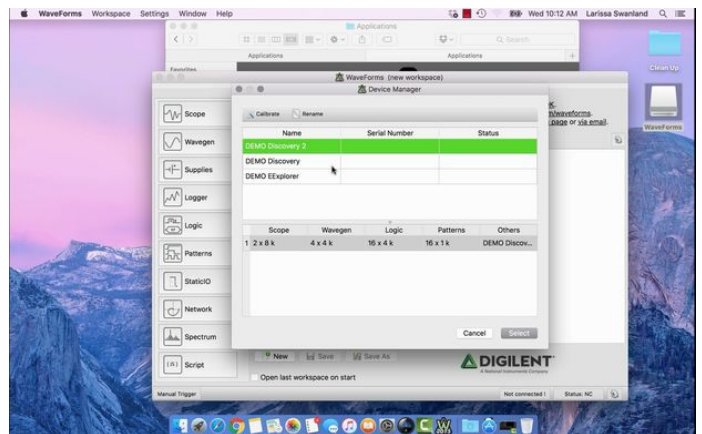
(https://digilent.com/reference/_detail/software/waveforms/waveforms-3/deviceconnected.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Mac

Open Demo Mode

We can run demo mode to get a feel for the interface and capabilities of WaveForms without having a device attached.

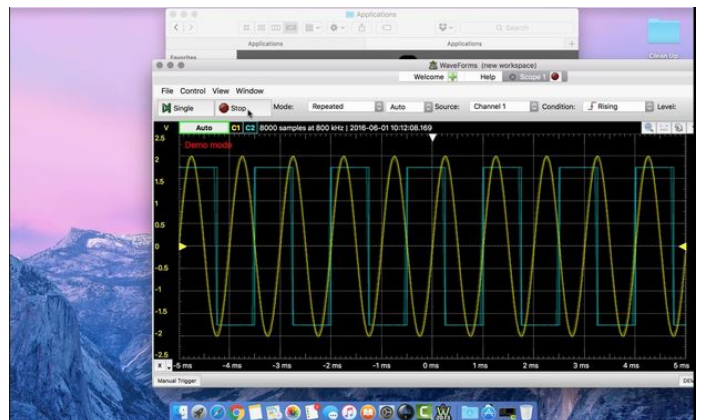
Click on “Demo Mode” and then click “Select”.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2waveforms2015-installation-osx/frnqbf9iovr764.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Open Oscilloscope in Demo Mode

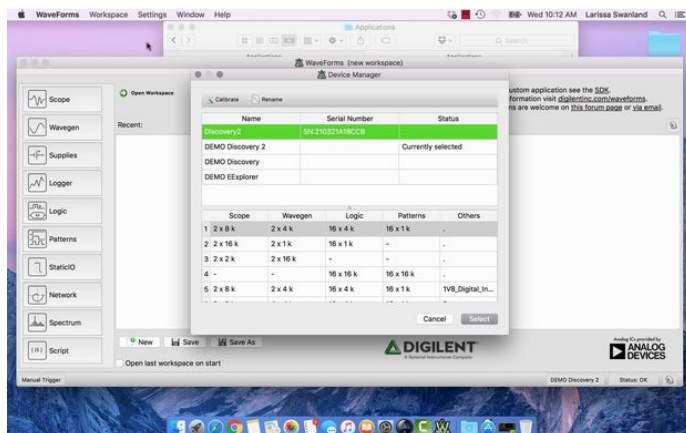
Open the oscilloscope tool and select “Play”. You can see a square and sine wave being demonstrated.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2waveforms2015-installation-osx/f812rc7iovr767.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Plug in and Select Device

When you plug in your device it will appear in the Device Manager.

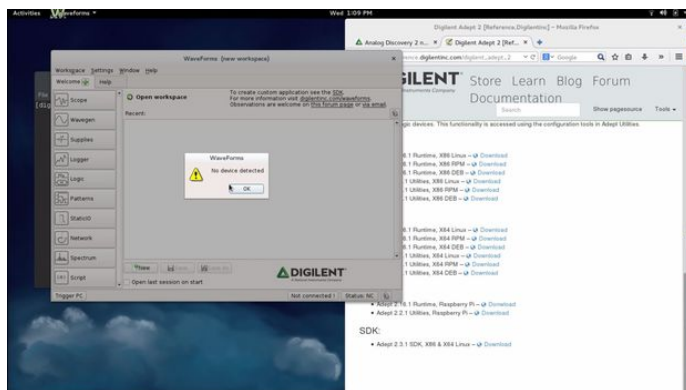


(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2-waveforms2015-installation-osx/fcovpociovpr768.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Linux

No Device

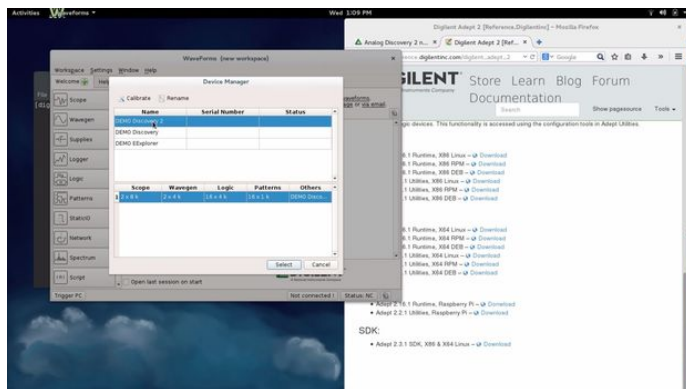
If you don't have the device plugged in, a window will pop up with a warning stating that no device was detected. You don't need to have a device to run the software, so go ahead and click "OK" to proceed.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2-waveforms2015-installation-linux/fxu03gyiovrpx1.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Run Demo Mode

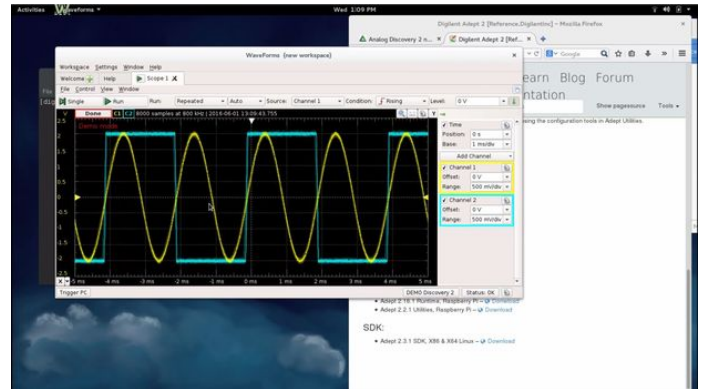
The device manager will now open. Click on "Demo Mode", and then click "Select".



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2-waveforms2015-installation-linux/fuhj01siovrpxn.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Demo Mode Oscilloscope

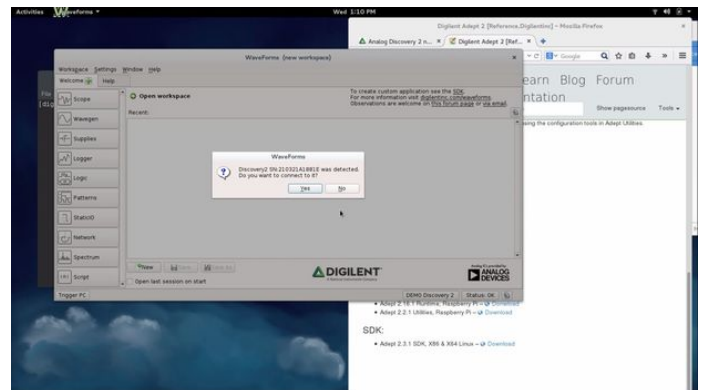
As mentioned previously, if you don't have a Test and Measurement device yet, that's okay. You can still run WaveForms in demo mode and get a feel for the interface and capabilities. The below image is a demo of the oscilloscope displaying a sine and square wave.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2-waveforms2015-installation-linux/ffr5kciiovprgzf.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Plug in device

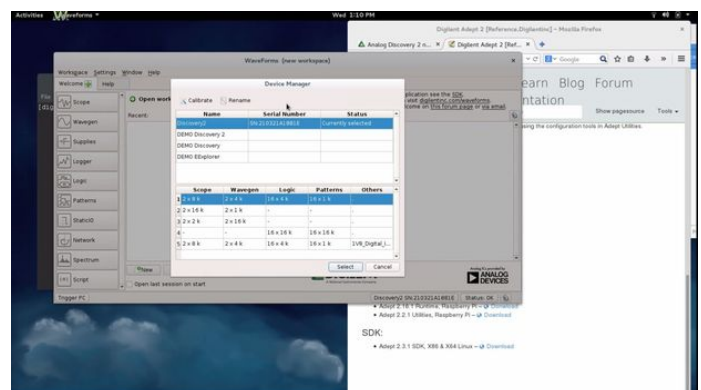
If you plug in your device, a window will pop up indicating that it was detected. Select "OK" to proceed.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2-waveforms2015-installation-linux/frlto0xiovprh01.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Device Manager

If you open the device manager, or you have the device plugged in when WaveForms is open, the window displayed in the image below will appear. Select your device, for example, just as you did for demo mode.



(https://digilent.com/reference/_detail/learn/instrumentation/tutorials/ad2-waveforms2015-installation-linux/fzyhbvfiovprh0a.medium.jpg?id=software%3Awaveforms%3Awaveforms-3%3Agetting-started-guide)

Additional Resources

For additional resources visit the [WaveForms Resource Center](https://digilent.com/reference/software/waveforms/waveforms-3/start) (<https://digilent.com/reference/software/waveforms/waveforms-3/start>). There you'll find the reference manuals, tutorials, downloads, and more.

For detailed steps about how to install and use WaveForms on Raspberry Pi, follow this guide: [Getting Started with Raspberry Pi and a Test and Measurement Device](https://digilent.com/reference/test-and-measurement/guides/getting-started-with-raspberry-pi) (<https://digilent.com/reference/test-and-measurement/guides/getting-started-with-raspberry-pi>).