

# PicoScope 7 Documentation

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# 1. Welcome to the PicoScope Documentation

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This user's guide is designed to help you use the PicoScope 7. With a scope device from Pico Technology, PicoScope turns your PC into a powerful PC oscilloscope and spectrum analyzer, with all the features and performance of a benchtop oscilloscope at a fraction of the cost.

For PicoScope products and tools, go to <https://www.picotech.co.uk>

*Use the contents menu on the left to navigate through the documents.*

## 2. Beginner guides

### 2.1 PicoScope 7 Quick-Start guide

This is a tutorial on how to install, launch and run the PicoScope 7 software for the first time. It is an ideal tutorial for new users to PicoScope 7 and PicoScopes entirely. For more information please contact our tech support team at [support@picotech.com](mailto:support@picotech.com)

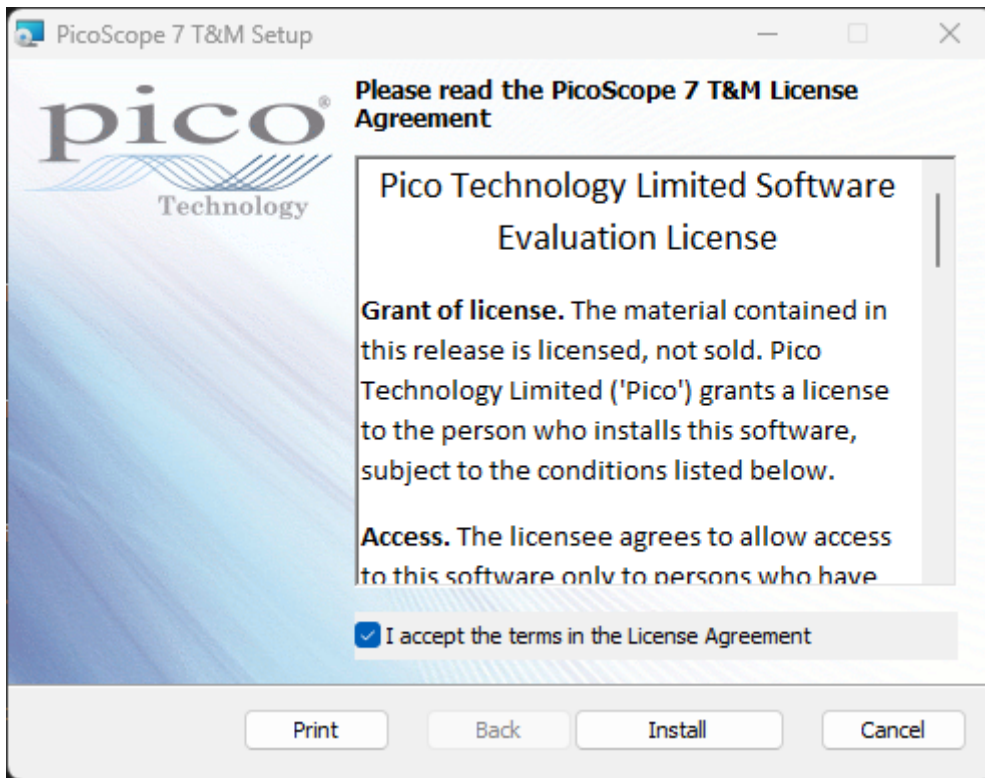
#### 2.1.1 Installing PicoScope 7

##### Windows

1. Go to <https://www.picotech.com/downloads>.
2. Select your **series** and **device** from the lists provided.
3. In **Software** download the **stable** (recommended) version of PicoScope 7.

Product series	PicoScope 6000 Series	PicoScope 6824E	Software				
PicoScope 2000 Series	PicoScope 6403E	Software	Resource	Architecture	Release	Size	Released
PicoScope 3000 Series	PicoScope 6404E	Manuals & brochures	Windows:				
PicoScope 4000 Series	PicoScope 6405E		PicoScope 7.1.21 (64-bit)	x64	Stable <i>*Recommended</i>	226 MB	Feb 15 2024
PicoScope 5000 Series	PicoScope 6406E		PicoScope 7.1.23 Early Access	x64	Early Access	226 MB	Feb 26 2024
PicoScope 6000 Series	PicoScope 6424E		PicoLog 6.2.9		Stable	103 MB	Feb 21 2024
PicoScope 9000 Series	PicoScope 6425E		PicoSDK 10.7.25 (32-bit)	x86	Stable	120 MB	Jul 03 2023
PicoLog Data Loggers	PicoScope 6426E		PicoSDK 10.7.25 (64-bit)	x64	Stable	124 MB	Jul 03 2023
PicoSource	PicoScope 6428E-D		Mac:				
PicoVNA	PicoScope 6804E		PicoScope 7.1.21	x64	Stable <i>*Recommended</i>	173 MB	Feb 15 2024
Discontinued products	PicoScope 6824E		PicoSDK 10.7.25	x64	Stable	33 MB	Jul 03 2023
Discontinued software			PicoScope 7.1.23	x64	Early Access	175 MB	Feb 26 2024

4. Run the installer and PicoScope 7 will be installed on your PC.

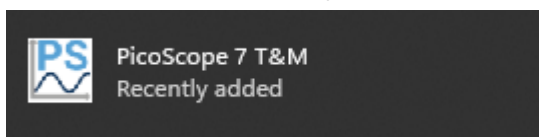


## 2.1.2 Plugging in your PicoScope

1. Use the included USB-A to USB-B cable and plug your PicoScope into your PC.
2. If your device comes with a mains plug adapter, please plug it in for full PicoScope functionality and power on.
3. When successfully plugged in, you may hear an audible two tones to signify your PC recognising the device.
4. You will see the LED on the front panel of your PicoScope lit with a solid colour.
5. Your PicoScope is now plugged in, now you can Launch PicoScope 7.

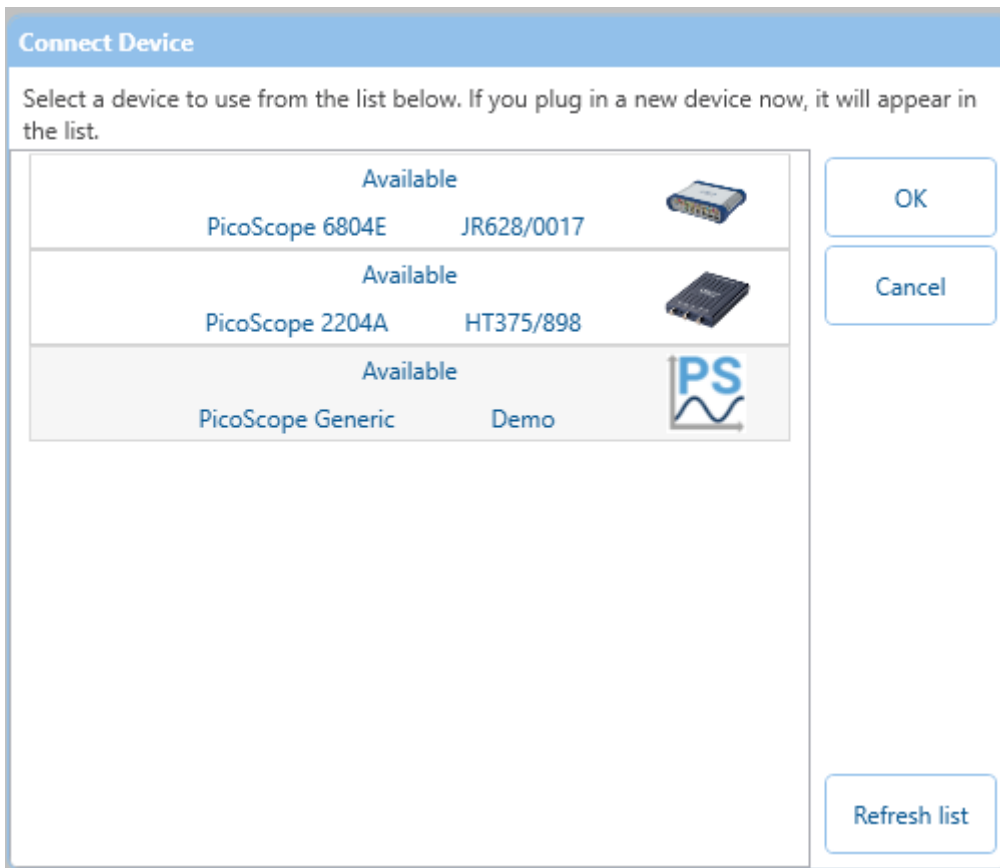
## 2.1.3 Launching PicoScope 7

1. Find the PicoScope 7 icon on your desktop or start menu, and click to launch PicoScope 7.

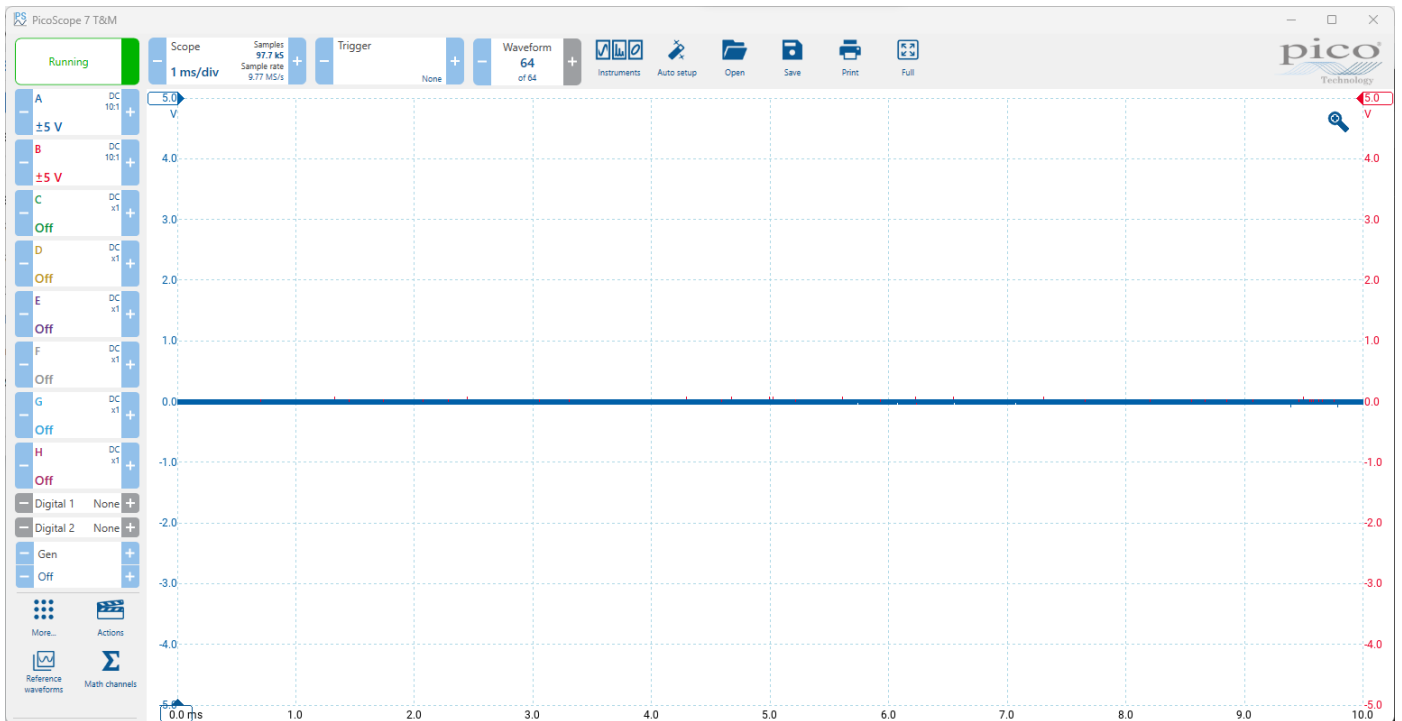


2. PicoScope 7 will open and search for a device on start-up.
3. If your PicoScope is detected, and it's the only PicoScope plugged in, it will connect and run that PicoScope.

4. If there is more than 1 PicoScope attached, you will need to select which PicoScope you are using.



5. Once a PicoScope is connected, the software will now be running.



To probe and display a signal correctly click **next**.

## 2.2 How to capture and display a signal using an oscilloscope

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This guide provides instructions on capturing and displaying a waveform using an oscilloscope and PicoScope so that the user can see the full cycle in the full resolution the oscilloscope can capture.

### 2.2.1 Probing the signal

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1. Take the ground clip of the probe and attach it to a reference 0 V ground pad or pin. This will make sure the PCB and oscilloscope are referenced to the same ground and not floating.
2. Take the probe and attach or place it on a pad, pin or IC leg.
3. Make sure the expected signal is displayed on the oscilloscope screen.

### 2.2.2 Viewing the signal on the oscilloscope display

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1. Adjust the [trigger](#) settings to make sure the signal is consistent and not stuttering around.
- 2.

## 2.3 How to trigger an oscilloscope

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When probing a signal using an oscilloscope, the signal may jump around or not display consistently on the display. To correct this stuttering/jumping, it's important to select the correct trigger type and trigger mode for the signal.



## 3. Training and Demos

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### 3.1 PicoScope MSO training and demo board

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Pico Technology provide a training and demo board designed to make the most of all the features of an oscilloscope. This is the perfect tool to pick up when learning about oscilloscope basics and advanced features and techniques.

Below is a video overview showcasing what the MSO training and demo board can do and how to get started with the basic techniques.

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For more information on the training and demo board, head to [picotech.com](https://picotech.com)

## 4. Reference

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### 4.1 PicoScope 7 troubleshooting

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When using a PicoScope and PicoScope 7 software, you may experience some issues that can be found below. For more information please contact [support@picotech.com](mailto:support@picotech.com)

#### 4.1.1 PicoScope device troubleshooting

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##### No light or USB detected of PicoScope when plugged in

This is usually due to no power to the PicoScope, try the following:

- Check PicoScope 7 software isn't **Stopped**.
- Check the USB cable is fully inserted at both ends
- Check USB cable isn't damaged.
- Try a different USB port on your PC.
- Try a different PicoScope USB cable.
- If a power plug adaptor came with the PicoScope, plug it in (needed for the 3000E and 6000E series).

If none of these actions worked, please contact your PicoScope distributor for advice.

#### 4.1.2 PicoScope 7 software troubleshooting

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This section provides troubleshooting for PicoScope 7 software issues, if these issues persist, please contact [support@picotech.com](mailto:support@picotech.com) or click **Send feedback** in the PicoScope 7 **More...** menu.

##### Trace on screen stutters and moves around too much

This is because the trigger settings aren't correctly set. - Open the **Trigger** lozenge and select

## 4.2 The PicoScope glossary

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### L

- *Lozenge*: Refers to the rounded-corner rectangles on the PicoScope 7 screen. These can be clicked to open a configuration window.

*e.g. the Trigger lozenge can be clicked to open the Trigger configuration panel*

### T

- *Timebase*: The timebase is the time measurement for each X-axis division on the PicoScope graph. As the graph is split into 10 divisions, the timebase can be increased or decreased to show more or less time of the trace on the screen.

*e.g. A timebase of 1 ms/div shows more of the signal than 500  $\mu$ s/div.*