

# Mobile Testing Accessory User's Manual

## User's manual Mobile Testing Accessory

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# Table of Contents

1	Introduction.....	1
1.1	Symbols used in this document.....	1
2	System Requirements .....	2
2.1	Mobile Testing Accessory requirements.....	2
2.2	Additional Tobii Pro software .....	2
3	Safety .....	3
3.1	Mounting.....	3
3.2	Proper Use .....	3
3.3	Emergency .....	3
3.4	Magnetic field .....	3
3.5	Child safety.....	3
3.6	Electricity .....	3
4	Overview of the Mobile Testing Accessory .....	4
4.1	What's in the box .....	4
4.2	How the Mobile Testing Accessory works .....	5
4.3	Next steps .....	5
5	Set up your display .....	6
5.1	Download and install Tobii Pro Eye Tracker Manager .....	6
5.2	Calibrate your eye tracker .....	6
5.3	Display setup in Tobii Pro Eye Tracker Manager .....	6
5.4	Assemble the Mobile Testing Accessory .....	11
5.5	Detach the eye tracker from the Mobile Testing Accessory.....	14
6	Start Experimenting .....	15
Appendix A	Support, Learning Center, and Warranty .....	16
A1	Customer Support .....	16
A1.1	Get help online.....	16
A2	Learning Center.....	16
A3	Warranty information .....	16
Appendix B	Compliance Information.....	17
B1	CE Statement .....	17
B2	VCCI.....	17
B3	Industry Canada Statement.....	17
B4	EMC .....	17
B5	Sustainability .....	17
B6	Safety .....	18
Appendix C	Technical Specifications .....	19
Appendix D	Limitations and Considerations .....	20
D1	Intended use.....	20
D2	Light conditions .....	20
D3	Eyelashes.....	20
D4	Droopy eyelids.....	20
D5	Glasses and contact lenses .....	20
D6	Distance .....	20
D7	Head and hand movements .....	20

# 1 Introduction

The Mobile Testing Accessory is a slim and compact accessory that enables eye tracking on small mobile devices. It offers a natural and efficient way to do high quality research and usability tests on mobile devices. Used together with the Tobii Pro Nano eye tracker and Tobii Pro Lab software, it makes a complete mobile testing solution.

The solution is perfect for when you want to perform mobile device user experience testing and other forms of research. Research participants can interact naturally with the mobile device, creating a distraction-free user experience. The flexible arm adjusts to a suitable position that mimics the natural feeling of holding the mobile device in your hand. Magnetic mounting brackets and sticky pads make it easy to detach the eye tracker and switch between different mobile devices.

The Mobile Testing Accessory works with both iPhone and Android phones, as well as smaller tablets with no need to install or download an app on the phone.

For more information, read [4.2 How the Mobile Testing Accessory works](#), page 5



The Pro Nano eye tracker and analytical software are not included with the purchase of the Mobile Device Stand. You will also need a laptop computer for setup and analysis. For more information, read [2.1 Mobile Testing Accessory requirements](#), page 2

## 1.1 Symbols used in this document

In this manual we use symbols for three levels of information:



The Note symbol is used for notifying the user of something important or of something that needs special attention.



The Caution symbol is used to inform of something that could cause harm to, or malfunction of, the equipment.



The Warning symbol is used to inform of something in which there is a conceivable risk of harm to the user if the Warning is ignored.

# 2 System Requirements

## 2.1 Mobile Testing Accessory requirements



In order to use the Mobile Testing Accessory, you will need a computer running analysis software such as Tobii Pro Lab and a Tobii Pro Nano eye tracker.

Operating system	Windows 10
Mobile Device	Screen mirroring via USB Type-C port Alt mode Samsung galaxy 8 or later iPhone 7 or later Huawei P30 Pro and later HTC 10 or later
Mobile Device port	USB Type-C or iPhone Lightning
Computer RAM	2 GB RAM memory* *Software for eye tracking research may require higher RAM

## 2.2 Additional Tobii Pro software

Pro Lab <a href="https://tobiipro.com/product-listing/tobii-pro-lab/">tobiipro.com/product-listing/tobii-pro-lab/</a>	Pro Lab is a comprehensive research software platform for eye tracking designed to meet the highest demands on different research scenarios with exact timing accuracy. This software offers an efficient workflow, making it easy to design experiments, record data, analyze and visualize eye tracking data, and to sync this data with other biometric data streams.
Pro SDK <a href="https://tobiipro.com/product-listing/tobii-pro-sdk/">tobiipro.com/product-listing/tobii-pro-sdk/</a>	Pro SDK offers a broad set of tools that makes it simple to develop a variety of niche applications or scripts across multiple platforms, using a wide range of programming languages. This SDK gives the researcher access to the full set of relevant gaze data streams, such as 3D eye coordinates, raw data, pupil data, etc.
Third-party software	This term refers to any application built on Pro SDK.

# 3 Safety

The Mobile Testing Accessory is designed for use with Tobii Pro Nano eye tracker. No other eye trackers should be used with the Mobile Testing Accessory. The Mobile Testing Accessory is only intended for use in office environments. Read this User Manual carefully before assembling or using the Mobile Testing Accessory. Please read the Tobii Pro Nano User Manual for safety precautions pertaining to the Pro Nano eye tracker. You can find it on the [Tobii Pro Nano webpage](#).

## 3.1 Mounting



Mobile Testing Accessory is designed to be used on a table. Be careful when mounting the mobile device and using the Mobile Testing Accessory to avoid injury to the user or the product. Ensure that the stand is assembled correctly and that the eye tracker is properly attached to the Device Holder before use to avoid damaging the Device Holder, the eye tracker, or the test participant.

## 3.2 Proper Use



Please follow the instructions in this User Manual carefully. Should the Mobile Testing Accessory for any reason harm someone or damage something due to falling or any other incident, neither Tobii Pro AB nor any of its representatives will be responsible nor liable for any damages or injuries that may occur. Mounting and use of the product is done entirely at the user's own risk.

## 3.3 Emergency



The Mobile Testing Accessory is designed for research purposes only. Be aware that due to the low, but possible risk of failure or distraction, the Mobile Testing Accessory should not be relied upon or used in dangerous or otherwise critical situations.

## 3.4 Magnetic field



The Mobile Testing Accessory contains magnets. Magnetic fields may interfere with the function of cardiac pacemakers and implantable cardioverter defibrillators. As a general rule, maintain a minimum distance of 15 centimeters (6 inches) between any item with magnets and your heart device.

## 3.5 Child safety



The Mobile Testing Accessory is composed of numerous separate, assembled parts. In the hands of a child, some parts could become separated from the device, possibly resulting in a choking hazard or other danger to the child. Young children should not have access to, nor use the device, without parental or guardian supervision.

Magnets should be kept out of reach of children.

Do not place the magnet in any body orifice such as ear, nose or mouth.

## 3.6 Electricity



The Screen Capture device is an electronic device that may have multiple AC power cords installed. All power sources should be disconnected before doing any service work to avoid shock hazard

Do not attempted to open or disable the Screen Capture device; it has no user-serviceable parts.

# 4 Overview of the Mobile Testing Accessory

## 4.1 What's in the box



**Figure 4.1** What's in the box

The Mobile Testing Accessory contains the following parts:

Number	Item	More information
1	Device Holder with one pre-attached Mounting Bracket and one Mounting Plate	Positions the eye tracker correctly in relation to the mobile device
2	Mounting Arm	Holds the Device Holder at the proper height
3	Magnetic Plate	Magnetically attaches the Device Holder to the Mounting Arm
4	Additional Mounting Plates	Extra plates for magnetically attaching the Device Holder to the Mounting Arm

5	Additional Mounting Brackets	Extra mounting brackets for attaching the eye tracker to the Device Holder
6	Female 3/8" to female 1/4" Adapter	Used to attach the Mounting Arm to the Base
7	Base	Weighted foot that holds the arm steady when placed on a table
8	2 Sticky Pads	Temporarily hold the mobile device on the Device Holder
9	Lightning to HDMI cable	Connects an iPhone to the Screen Capture device
10	USB Type-C to HDMI cable	Connects an Android phone to the Screen Capture device
11	Screen Capture device and cable	Connects the mobile device and the computer to convert the screen into a camera feed

## 4.2 How the Mobile Testing Accessory works

The mobile device is attached to the Device Holder using a sticky pad. The arm and base are used to support and stabilize the Device Holder for better data quality. The Device Holder is attached to the arm using the Magnetic Plate. The Pro Nano eye tracker sits on the Device Holder and is positioned 5 cm behind the device screen for optimal eye tracking. The Screen Capture device is connected to the mobile device and to the computer and captures what's on the device screen. This makes it possible to then use Tobii Pro Lab or other analytical software to merge the participant's gaze (where the participant looks) and what is shown on the device screen. In this way, UX researchers and others can analyze and understand the user's experience on a mobile device.

## 4.3 Next steps

Set the Mobile Testing Accessory box aside for the moment. You will assemble it after using *your computer* to calibrate and set up the display for the mobile device.

# 5 Set up your display

At the end of this setup, you will have a verified installation that is ready for use.

## 5.1 Download and install Tobii Pro Eye Tracker Manager

The first step is to get the free software, Pro Eye Tracker Manager on your computer. Setting up your Pro Nano eye tracker involves installing the necessary drivers and software on your computer. Pro Eye Tracker Manager makes this easy.

You can skip this step if you already have the latest version of Tobii Pro Eye Tracker Manager installed.



Your eye tracker does *not* need to be connected to the computer to install Pro Eye Tracker Manager.

1. Before starting, double-check the hardware and system requirements, 2 *System Requirements*, page 2 You should also check the requirements for your analysis software, for example, Tobii Pro Lab.
2. Download Pro Eye Tracker Manager from [Tobii Pro's product page](#).
3. Open Pro Eye Tracker Manager and follow the prompts to finish installation.



Read more about [setting up and installing your Pro Nano eye tracker](#) the Tobii Pro website.

## 5.2 Calibrate your eye tracker

Next you need to calibrate your Tobii Pro Nano eye tracker. Tobii Pro recommends that you calibrate the Pro Nano eye tracker for **each participant** using a computer *before* attaching it to the Mobile Testing Accessory Device Holder.

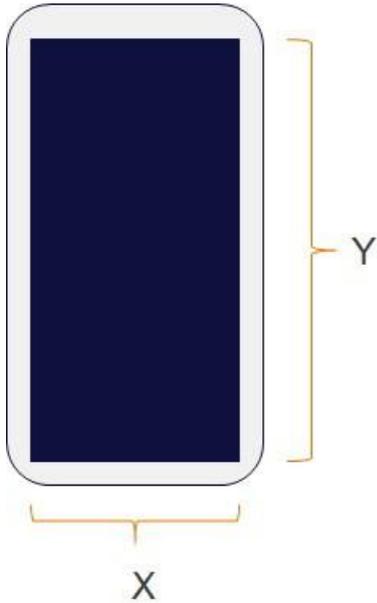
This step can be skipped if you already have calibrated the eye tracker for the participant. Read more about [setting up and installing your Pro Nano eye tracker](#) on the Tobii Pro website.

## 5.3 Display setup in Tobii Pro Eye Tracker Manager

Now the algorithms in the eye tracker need to understand where the eye tracker is in relation to the mobile device screen in order to map the gaze points accordingly. This is done in Tobii Pro Eye Tracker Manager on a computer when the Tobii Pro Nano is connected to the PC.

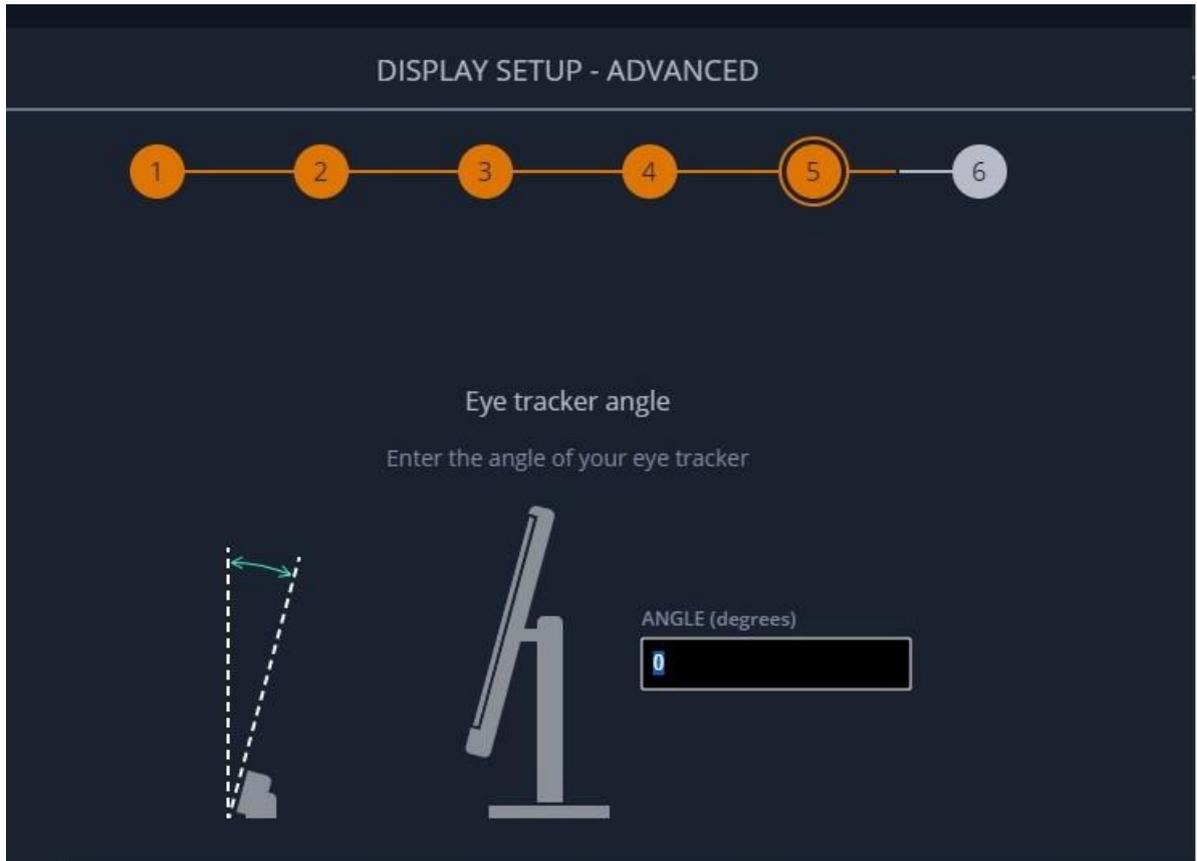
1. Make sure you have calibrated your eye tracker on a computer before continuing with the screen setup.
2. Open Tobii Pro Eye Tracker Manager on your computer and select your Pro Nano eye tracker
3. On the drop-down menu, click **New**.
4. Select **Advanced setup** and click the **Next** button.

- 5. **Screen size:** Enter the size of the device (X and Y) of the mobile device in mm. Click **Next**.



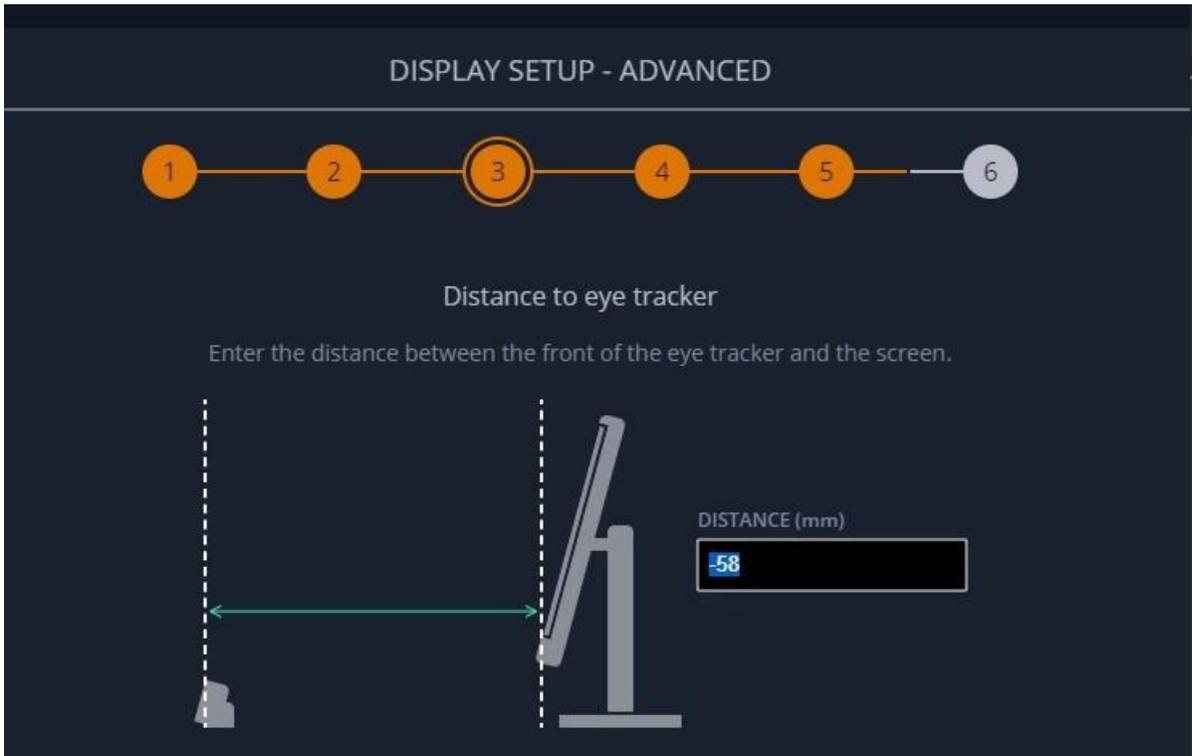
**Figure 5.1** Measure the mobile device screen

- 6. **Eye tracker angle:** Set the Eye tracker angle to zero (0) and click **Next**.



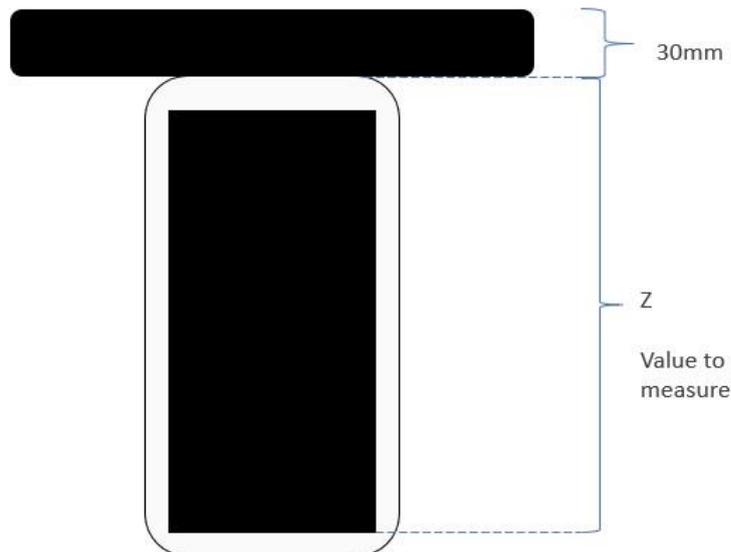
**Figure 5.2** Enter the angle of your eye tracker

- Distance to eye tracker:** Set the Distance to eye tracker to minus 58 (-58). This is a pre-calculated value determined by Tobii Pro. *It's a negative number because the eye tracker sits on top of and behind the screen.* Click **Next**.



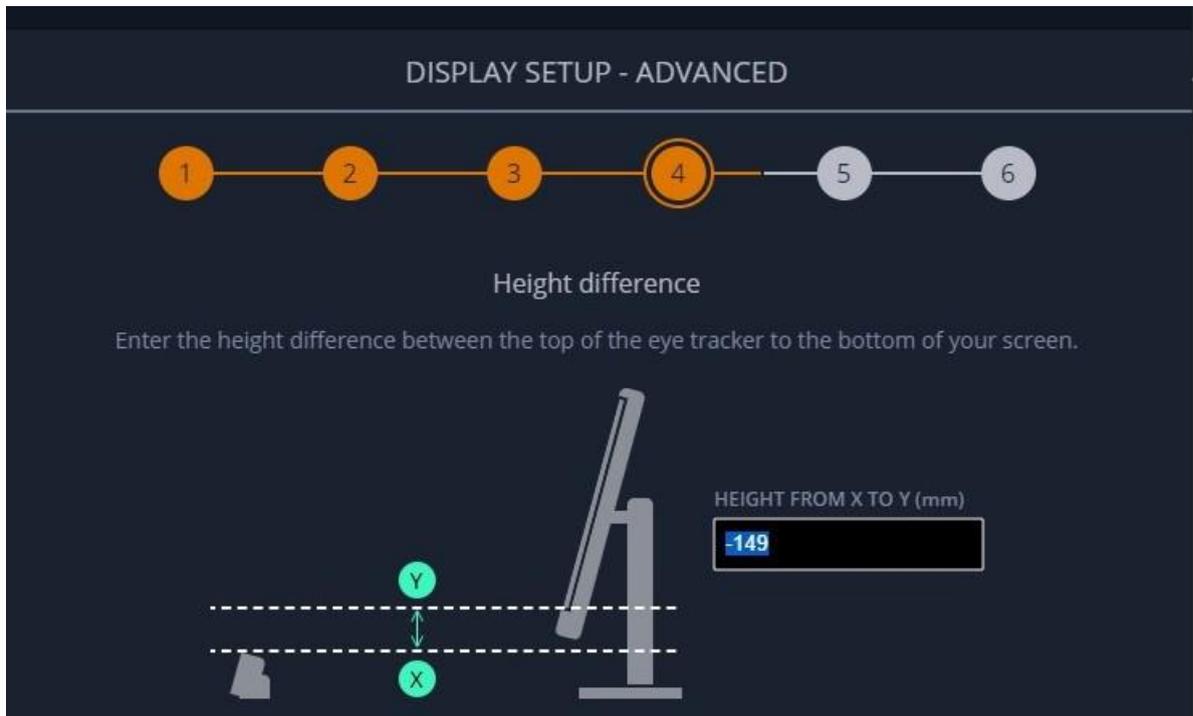
**Figure 5.3** Enter the distance between the front of the eye tracker and the screen

- Height difference:** The height difference is calculated from the top of the eye tracker to the bottom of the screen. Since the length can vary between different mobile devices you must measure the distance from the top of the mobile device to the bottom of the screen value Z (as shown in the image below). Add 30 mm (the eye tracker distance) to the measured value, ex. -value = -(Z+30).



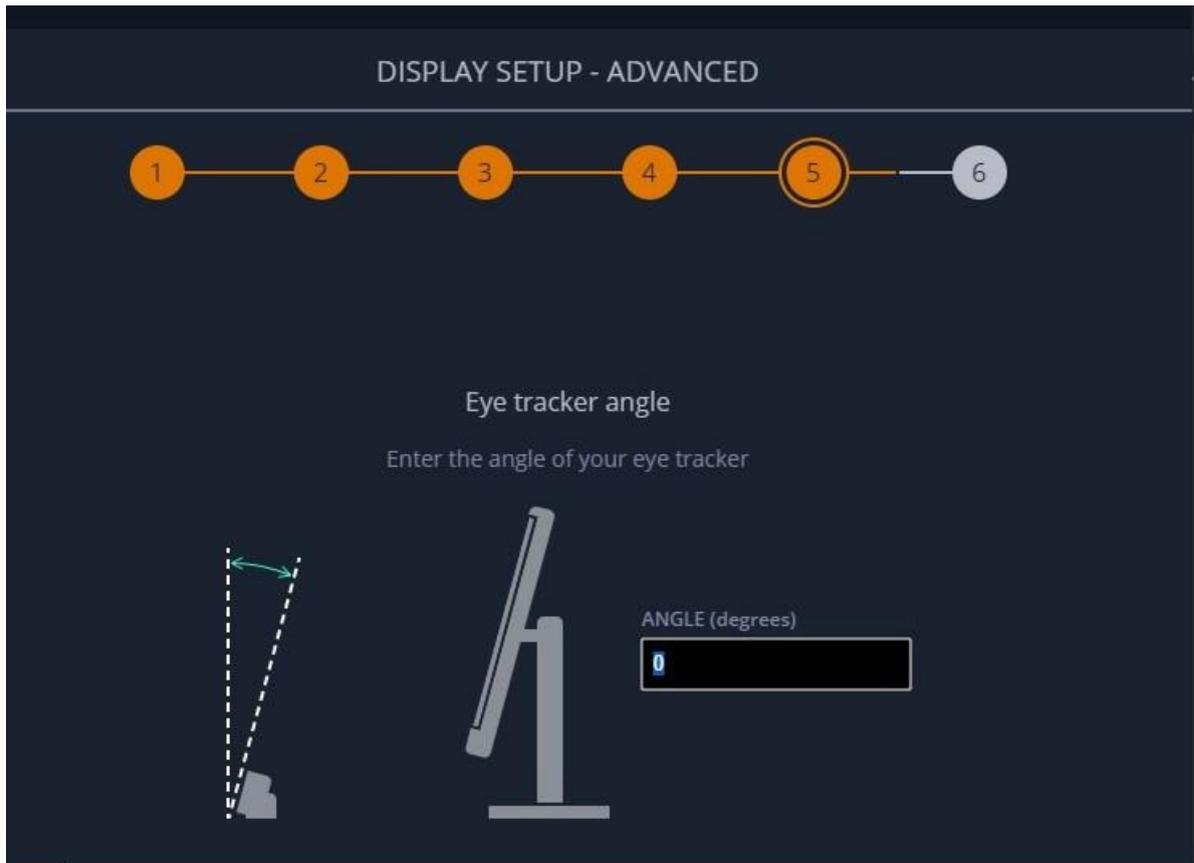
**Figure 5.4** Height difference

As mentioned previously, *the number you enter will be a negative one* since the eye tracker is positioned on top of and behind the screen. For example: if the measured value is 119 mm, then the entered value will be -149 mm (the sum of  $-119 + -30$ ). Enter your calculated value and click **Next**.



**Figure 5.5** Enter the height difference between the top of the eye tracker to the bottom of your screen

9. **Eye tracker angle:** Set the eye tracker angle to zero (0). Click **Next**.



**Figure 5.6** Enter the angle of your tracker

10. Enter a name and click **Save**. Your mobile device settings will be saved under that name on your eye tracker.

## 5.4 Assemble the Mobile Testing Accessory

Now it's time to put your Mobile Testing Accessory together. It will look like this when it is assembled:



**Figure 5.7** The fully assembled Mobile Testing Accessory

1. Remove the protective plastic from a Sticky Pad and attach it to the Device Holder by pressing gently. If the Sticky pad is not sticky, clean it with some water.
2. Attach the mobile device to the Device Holder by placing the mobile on the sticky pad and pressing gently. Make sure that the mobile is aligned with the top of the Device Holder.



**Figure 5.8** The mobile device attached to the Sticky Pad on the Device Holder

-  The Sticky Pads are made for reuse. If you find that one of the Sticky Pads is not holding the mobile device securely, clean it with cold water to remove any particles.
-  You can easily remove the mobile device whenever you want by pulling the mobile device gently away from the Sticky Pad attached to the Device Holder. There should be no residue stickiness left on the mobile device. If the Sticky Pad is dirty, clean it with cold water only. This will reactivate the adhesive and remove any unwanted dirt.

3. Attach the eye tracker to the magnetic Mounting Bracket located at the top of the Device Holder.



**Figure 5.9** The mobile device and the Pro Nano eye tracker attached to the Sticky Pad on the Device Holder

4. Connect the eye tracker via USB to a computer.
5. Plug the mobile device into the Screen Capture device. Use the iPhone lightning to HDMI for iPhone or the USB to HDMI cable for Android.



If using an iPhone, make sure that the USB Type-C cable is connected to a power supply or the computer's USB port.

6. Plug in the HDMI end of the cable into the Screen Capture device.



**Figure 5.10** The Screen Capture device

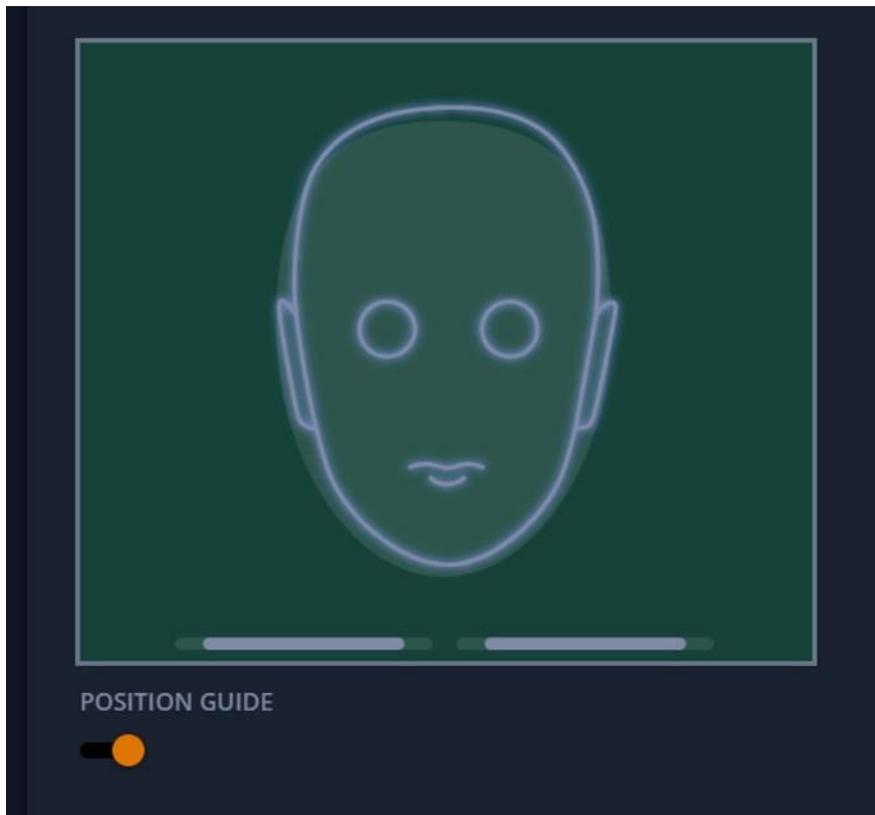
7. Attach the Screen Capture device to the computer via USB.
8. Mount the Mounting Arm on the Base using the female 3/8" to female 1/4" Adapter.
9. Screw the Magnetic Plate to the Mounting Arm.
10. Snap the Device Holder to the Mounting Arm.



To remove the Device Holder from the Mounting Arm, gently twist it to one side.

11. Adjust the arm to the desired position and tighten the knob.

12. Confirm that the eye tracker can detect the participant's eyes using Pro Eye Tracker Manager on the computer. Enable the Position Guide at the bottom left of Pro Eye Tracker Manager. Once activated, you should be able to see two "eyes" in a face contour.



**Figure 5.11** Position Guide in Pro Eye tracker Manager



If the eye tracker doesn't find the participant's eyes, make sure that you have calibrated the eye tracker first on a computer screen. Pro Eye Tracker Manager only looks for gaze that falls into the defined area, e.g. the mobile device screen. If the eye tracker is not calibrated for each participant's eyes, the offset can be too big and the green head will not show up when looking at the mobile device screen. If you have calibrated the eye tracker before attaching it to the Device Holder, the eye tracker will have a lower offset and it will then be able to detect the gaze in the defined screen setup.

## 5.5 Detach the eye tracker from the Mobile Testing Accessory

To remove the eye tracker, gently pull it away from the Mounting Bracket and leave the Mounting Bracket in place. Do not remove the bracket from the DeviceHolder.

You can purchase additional mounting brackets. See the Tobii Pro [Accessories webpage](#).

## 6 Start Experimenting

Recording and analyzing data with Mobile Testing Accessory can be done in an analytical software such as Tobii Pro Lab using the screen camera projects. Tobii Pro Lab gives you the possibility to calibrate the eye tracker on the mobile device and record and analyze it. Find out more about using the Mobile Testing Accessory together with Tobii Pro Lab on the Tobii Pro [Learning Center](#) webpages.

# Appendix A Support, Learning Center, and Warranty

## A1 Customer Support

If you need help, please contact [Customer Support](#) at Tobii Pro.

### A1.1 Get help online

Many questions can be answered by visiting Tobii Pro Connect. It contains the latest information about contacting Support, links to our Learning Center, and much more. Log in or register to see information about your account and to reach Customer Support at [Tobii Pro Connect](#).

## A2 Learning Center

If you are new to eye tracking, or want to extend your knowledge about eye tracking research, sign up for one of our learning programs and events, or browse through our extensive article library in our [Learning Center](#).

For further product information and other support resources, please visit [www.tobiiipro.com](http://www.tobiiipro.com).

## A3 Warranty information

Read more about Tobii Pro Care on [Service Description](#).

# Appendix B Compliance Information



Mobile Testing Accessory is CE-marked, indicating compliance with applicable health and safety legal requirements set out in the European Union and EEA.



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Mobile Testing Accessory is allowed to be sold in:

- European Economic Area
- USA
- Canada
- Japan
- China

## B1 CE Statement

Mobile Testing accessory is CE-marked, certifying compliance with the legal requirements for health, safety and environmental protection requirements for the European market. Mobile Testing accessory complies with the following directives:

- 2011/65/EU (RoHS 2) - Restriction of Hazardous Substances Directive
- 2014/30/EU (EMC) - Electromagnetic Compatibility Directive

## B2 VCCI



Mobile Testing accessory is Approved for the Japanese technical EMC standards V 3/2014.04 for limits and methods of measurement of electromagnetic interference.

## B3 Industry Canada Statement

Mobile Testing accessory has been tested and found to comply with ICES-003:2016, Issue 6, Class A devices.

## B4 EMC

Mobile Testing accessory is CE-marked, certifying compliance with the legal requirements for health, safety and environmental protection requirements for the European market. Mobile Testing Accessory complies with the following directives:

- EN 55032:2015 +AC:2016 (Class A)
- EN 55022:2010 + AC:2011
- EN 55024:2010 +A1:2015
- FCC 47 CFR Part 15, Subpart B
- ICES-003 Issue Class A
- VCCI: V-3/2014.04

## B5 Sustainability

Mobile Testing Accessory complies with the following standards and directives:

- IEC 62321-3-2:2013
- IEC 62321-4:2013
- IEC 62321-5:2013
- IEC 62321-6:2015
- IEC 62321-7-1:2015
- IEC 62321-7-2:2015
- IEC 62321-8-1:2017

Directive 1907/2006-201 (EU REACH)

## **B6 Safety**

Mobile Testing Accessory complies with the following standards:

- EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
- UL 60950-1 Standard for Safety Information Technology Equipment

# Appendix C Technical Specifications

Compatible eye trackers	Tobii Pro Nano Small tablets and smart phones
Recommended devices	Smaller tablets and smartphones
Screen capture	HD up to 1080p 60fps
Sound recording	Not included; use the computer's audio recorder to record sound
Recommended position of the mobile device	Portrait orientation
Most optimal operating angle	20 – 50 degrees
Stand dimensions	13,6 x 11,4 cm (5.35 x 44.88")
Height	Top height 34 cm (13.38")
Weight	

# Appendix D Limitations and Considerations

## D1 Intended use

The Mobile Testing Accessory is designed to work with the Tobii Pro Nano eye tracker for mobile device testing.

## D2 Light conditions

Tobii Pro recommends that eye tracking studies be performed in a controlled environment. Sunlight should be avoided since it contains high levels of infrared light which will interfere with the eye tracker system.

Direct light from ceiling lights can affect the quality of your data. Do not place the participant directly under a light source while performing eye tracking.

## D3 Eyelashes

Because the eye tracker is positioned on the top of the screen, the Mobile Testing Accessory solution is sensitive to eyelashes, which can be obstructive when the participant's eyes are not fully open, especially if the participant is wearing mascara. In rare cases, eyelashes can completely block the view of the participant's pupils, making eye tracking impossible.

## D4 Droopy eyelids

Droopy eyelids or otherwise obstructive eyelids can block the view of the participant's pupils. In rare cases, such eyelids may completely block the view of the participant's pupils, making eye tracking impossible.

## D5 Glasses and contact lenses

Participants with bifocal or progressive glasses should be screened out or asked to remove their glasses. Bifocals and progressive glasses may reduce accuracy. Contact lenses may slightly increase eye tracking interference but do not normally introduce any error into the data. Colored or other lenses that change the appearance of the pupil or iris should be avoided as they might make eye tracking impossible.

## D6 Distance

Usage of the eye tracker is limited to the track box which means that for some participants the operating distance will be too far to hold the device in their hand. Use of the Mobile Testing Accessory with the Mounting Arm holds and stabilizes the mobile device.

## D7 Head and hand movements

Head movements can affect the quality of the eye tracking data. The participant should hold their head still during eye tracking. Holding the mobile device in the participant's hand while eye tracking will affect the quality of the data. It is highly recommended to use the Mobile testing Accessory with the Mounting Arm to stabilize the mobile device.



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## Support for Your Tobii Pro Device

### Get Help Online

Visit Tobii Pro Connect for help with your Tobii Pro device. It contains the latest information about contacting Support, links to our Learning Center, and much more.

Visit [connect.tobii.com](https://connect.tobii.com)

### Contact Your Solution Consultant or Reseller

For questions or problems with your product, contact your Tobii Pro sales representative or authorized reseller for assistance. They are most familiar with your personal setup and can best help you with tips and product training.

Visit [tobii.com/contact](https://tobii.com/contact)