



From  Inclusive Technology



Skyle 2 for iPad Pro User Manual

www.inclusive.co.uk/skyle-for-ipad-pro

Contents

02: Skyle 2 for iPad

03: What's in the box

04: Technical Specifications

04: Getting Started

04: Assembly

06: Connect the eye tracker

06: Skyle X App

06: Installation

07: Setup

08: Stream

09: Positioning

10: Calibration

13: Additional Features

13: Step by step calibration

13: Help to improve the eye tracking algorithm

14: Profiles

15: Gaze Selection

15: UI uses Gaze Selection

15: Dwell time and Scroll Speed

16: Calibration Pointer

16: Update

17: Advanced Settings

17: Improvement

17: Safety Instructions

Skyle 2 for iPad

Thank you for choosing Skyle 2 for iPad.

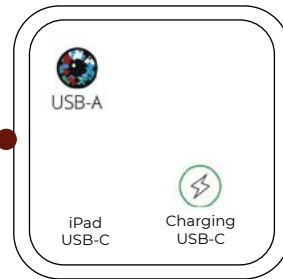
Skyle 2 for iPad is an eye tracker designed for iPad Pros of the 3rd to 5th generation. With the Skyle software and AssistiveTouch from Apple, the complete iPad Pro can be controlled contactless. If you want to integrate Skyle into your own application, you are free to use the public API. You can find it at www.github.com/eyev-de

What's in the box

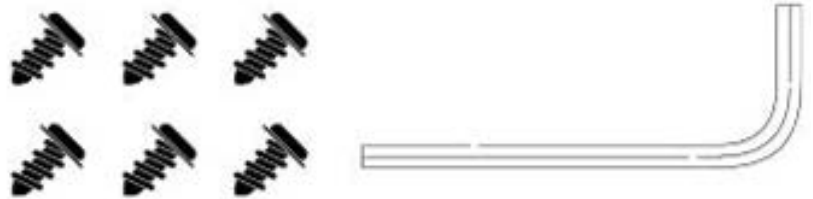
1x Skyle 2 eye tracker attached to iPad Case.



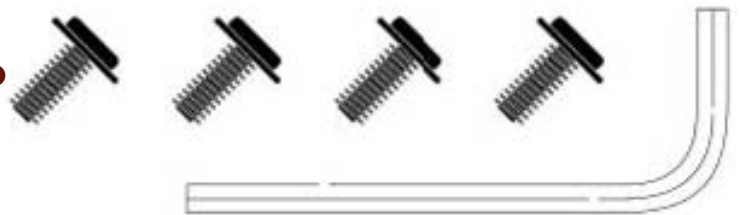
1x USB PD Hub.



6x Housing screws with Torx/Hex/Allen Key



4x Screws for VESA-Mount with Torx/Hex/Allen Key.



1x USB-C to USB-A cable.



Technical Specifications

Supply voltage	5V DC
Current consumption	0.9 A
Sampling rate	18 Hz (max. 30Hz)
Accuracy	1° - 2°
Eye tracking mode	Binocular
Operating distance	45 – 65cm
Dimensions	(L) 282.5 x (W) 42.5 x (H) 39mm
Device Compatibility	iPad Pro 12.9" 3rd to 5th Generation
Mounting possibilities	VESA 75 Standard

Please note: Inclusive Technology reserves the right to make modifications, improvements, corrections, or other changes without further notice to this document and any product described herein.

This product is not authorised for use as critical components in life support devices or applications, where the use can be reasonably expected to result in significant injury to the user.

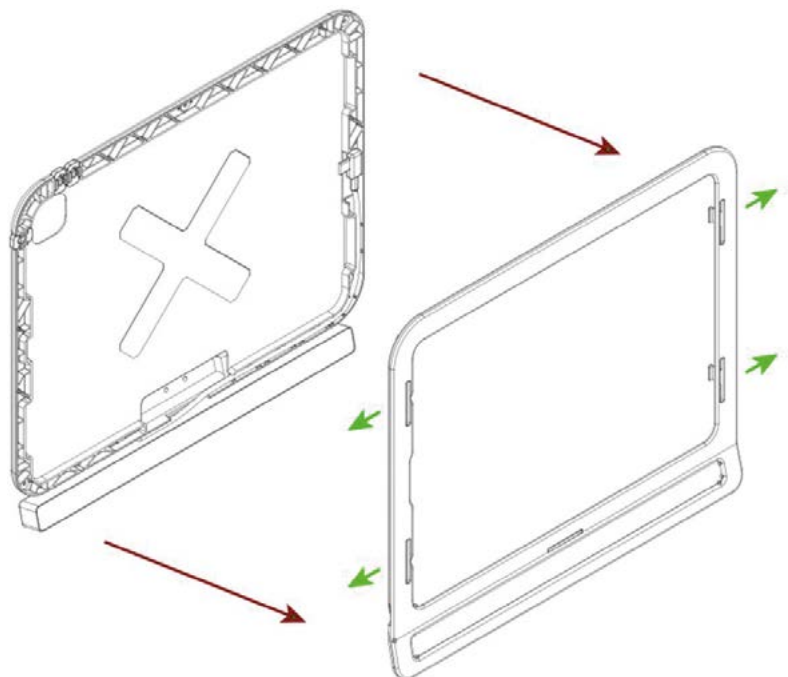
Getting Started

This chapter describes the basic setup of the eye control and the installation of the software.

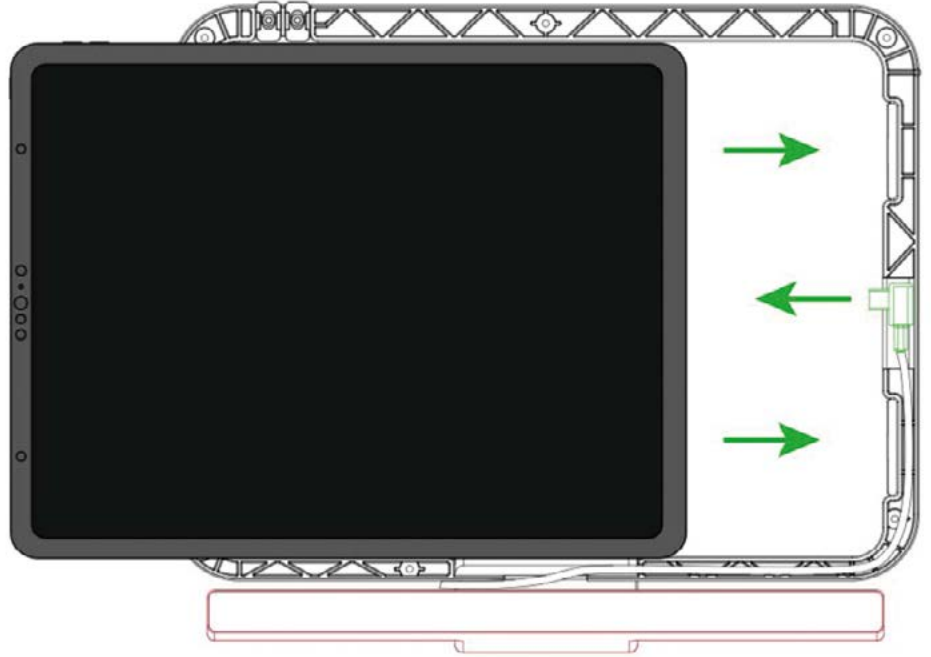
Assembly

1. The Skyle 2 eye tracker is already attached to the housing on delivery. A cable that leads to the iPad is also attached to the case. The housing consists of two parts that are supplied already assembled.

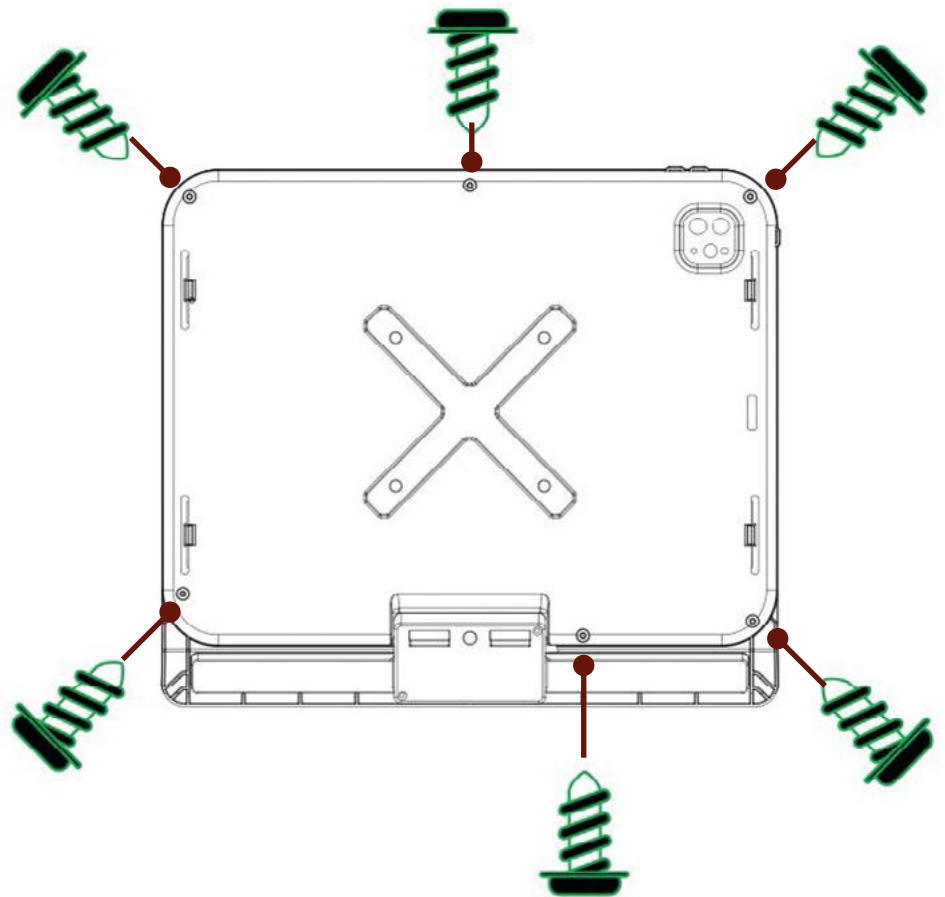
Please carefully loosen the green marked snaps and remove the front in the red marked direction.



2. Place the iPad into the back pane and connect the USB-C cable to your iPad.



3. Place the front panel on the iPad. Make sure the clips snap into place, flip the case and apply the screws.

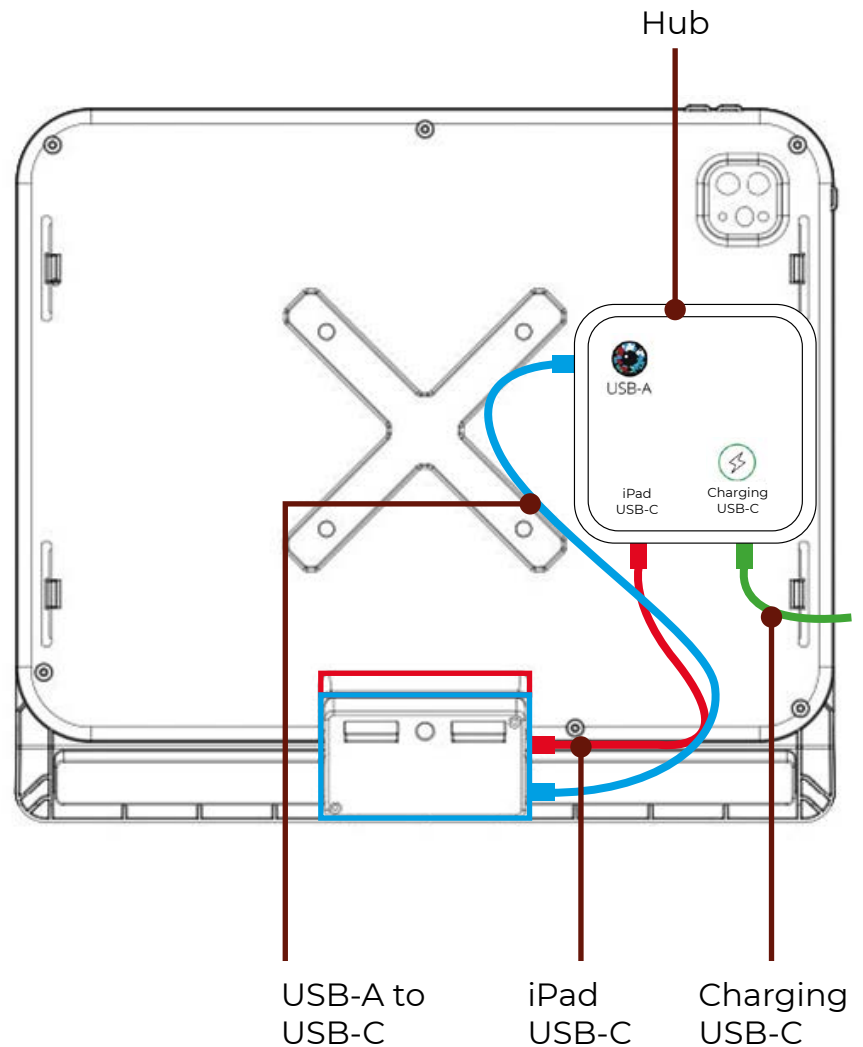


Connect the eye tracker

The included hub has 2 USB-C ports. All important ports are marked. One USB-C port is for the **USB-C cable** coming out of the case, which is connected to the iPad. The other **USB-C port** can be used for simultaneous charging.

The included **USB-A to USB-C cable** is connected to the hub with the USB-A end. The USB-C end is connected to Skylе 2.

The hub can now be attached to the case with the already attached adhesive Velcro®.



Skyle X App

The App can be used to calibrate the controller, create profiles or customize the appearance. With AssistiveTouch you are able to control the iPad's mouse cursor without physical contact.

Installation

The Skyle X App for iPad can be downloaded here:
<https://apps.apple.com/us/app/skyle-x/id1570826111>

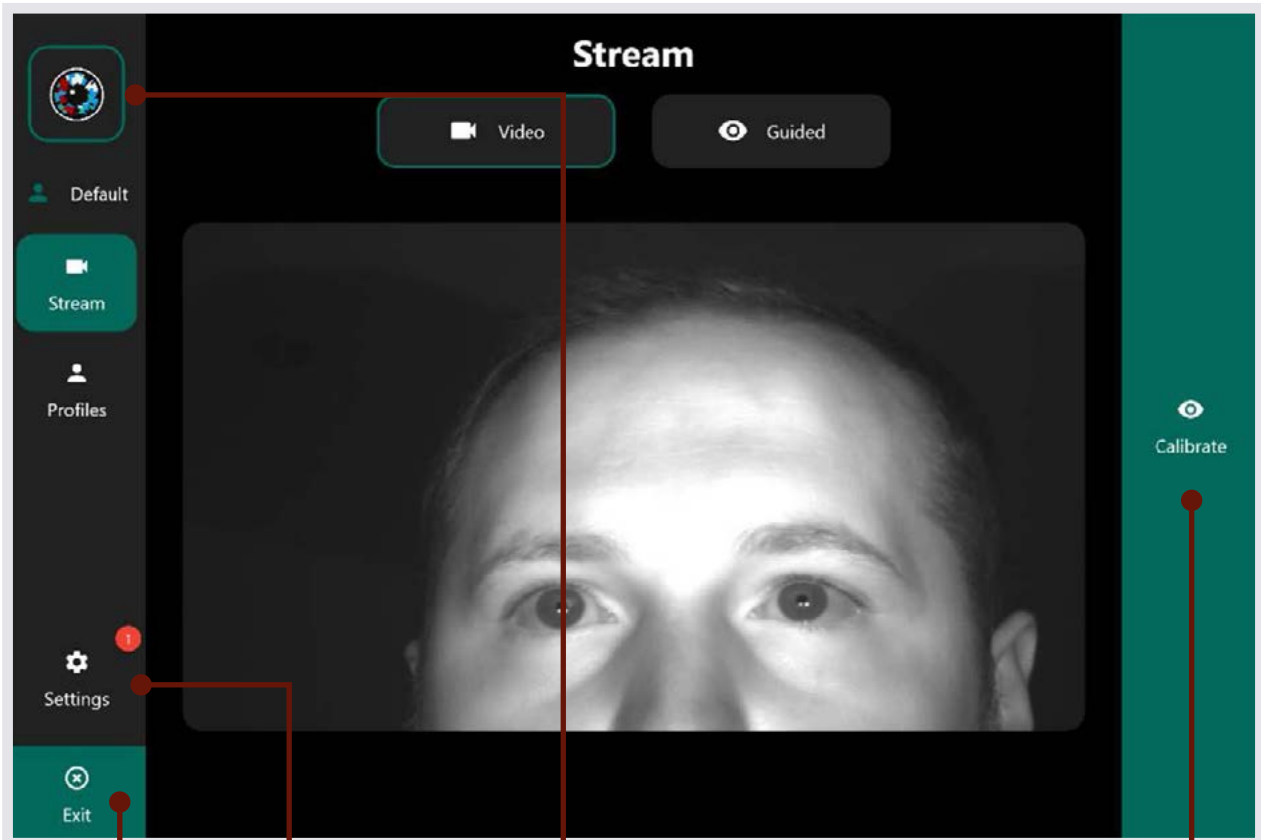
Download and install the "Skyle X" application on your iPad from the link above or the QR code. This App is required for the user-specific calibration of the eye tracker.

The App also offers the possibility to display the camera feed of the eye control to carry out an optimal positioning. The details of the software are described in the following chapters.



Stream

The stream can be viewed for correct positioning and important settings can be made here. Settings are explained in more detail in the following sections. Exit will minimise the Skyle X App enabling you to control your iPad.



Exit

Settings

Skyle status indicator

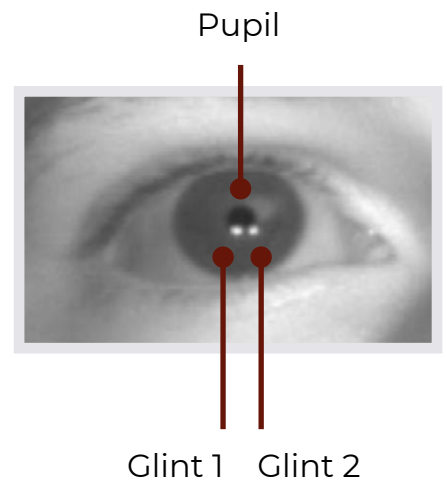
Calibrate

Positioning

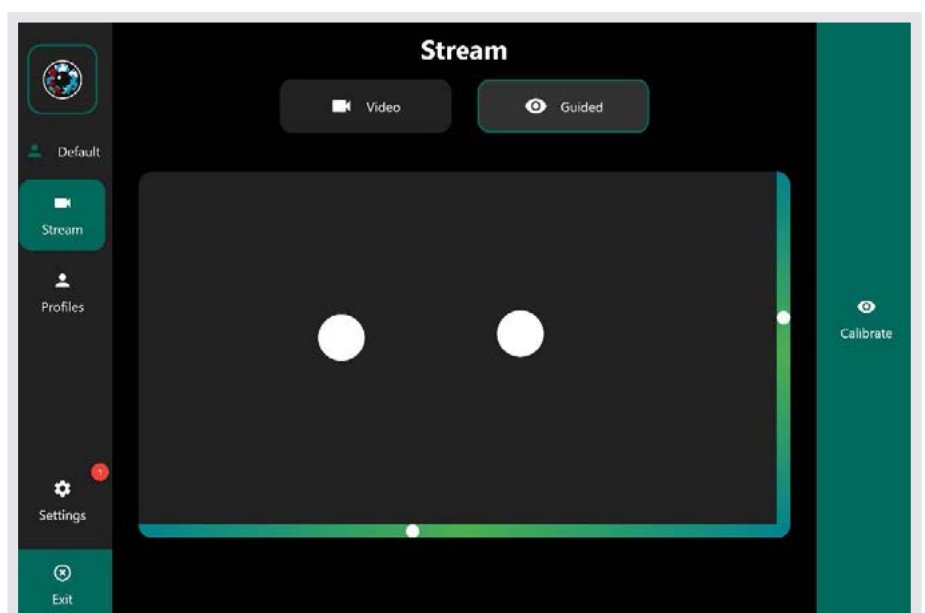
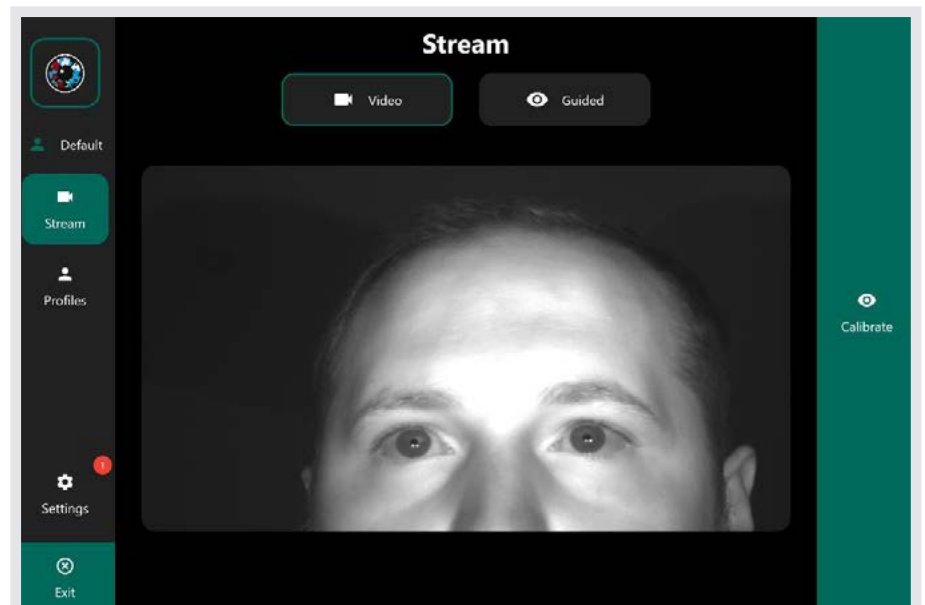
If the eye tracker is ready for use, eye movements are converted into mouse positions. If not, make sure that the user is positioned correctly. This means that the built-in camera must recognize your eyes completely.

To do this, open “Stream > Video”. The pupil and the two white reflections in the eye must be clearly visible and sharp.

The optimal position is when the user is positioned parallel to the screen surface and the eyes are centered on the video stream. The recommended distance is ~60cm.

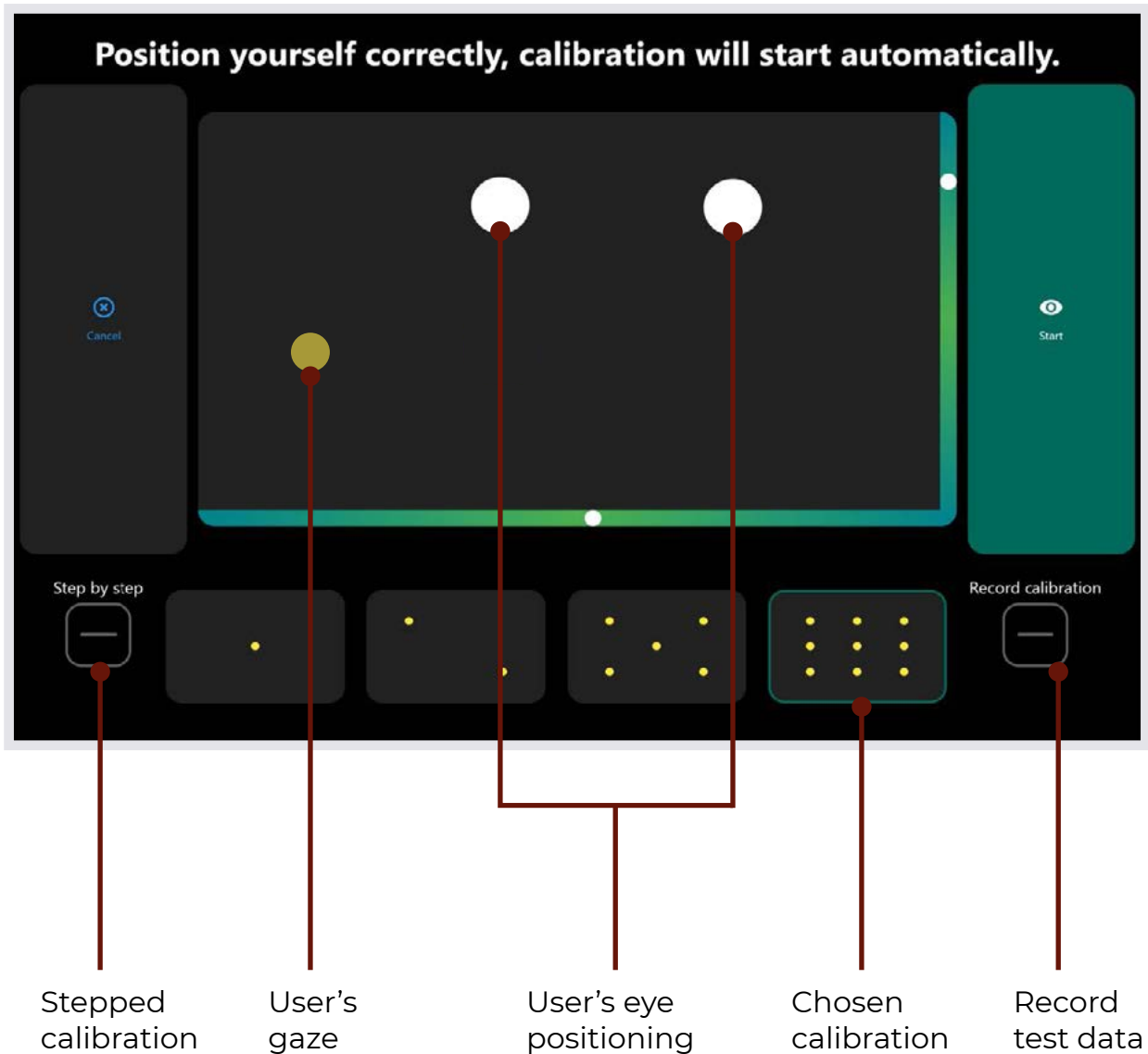


The video stream is turned on by default, but it can also be turned off or toggled so that only a simplified guided display with assistance is shown.



Calibration

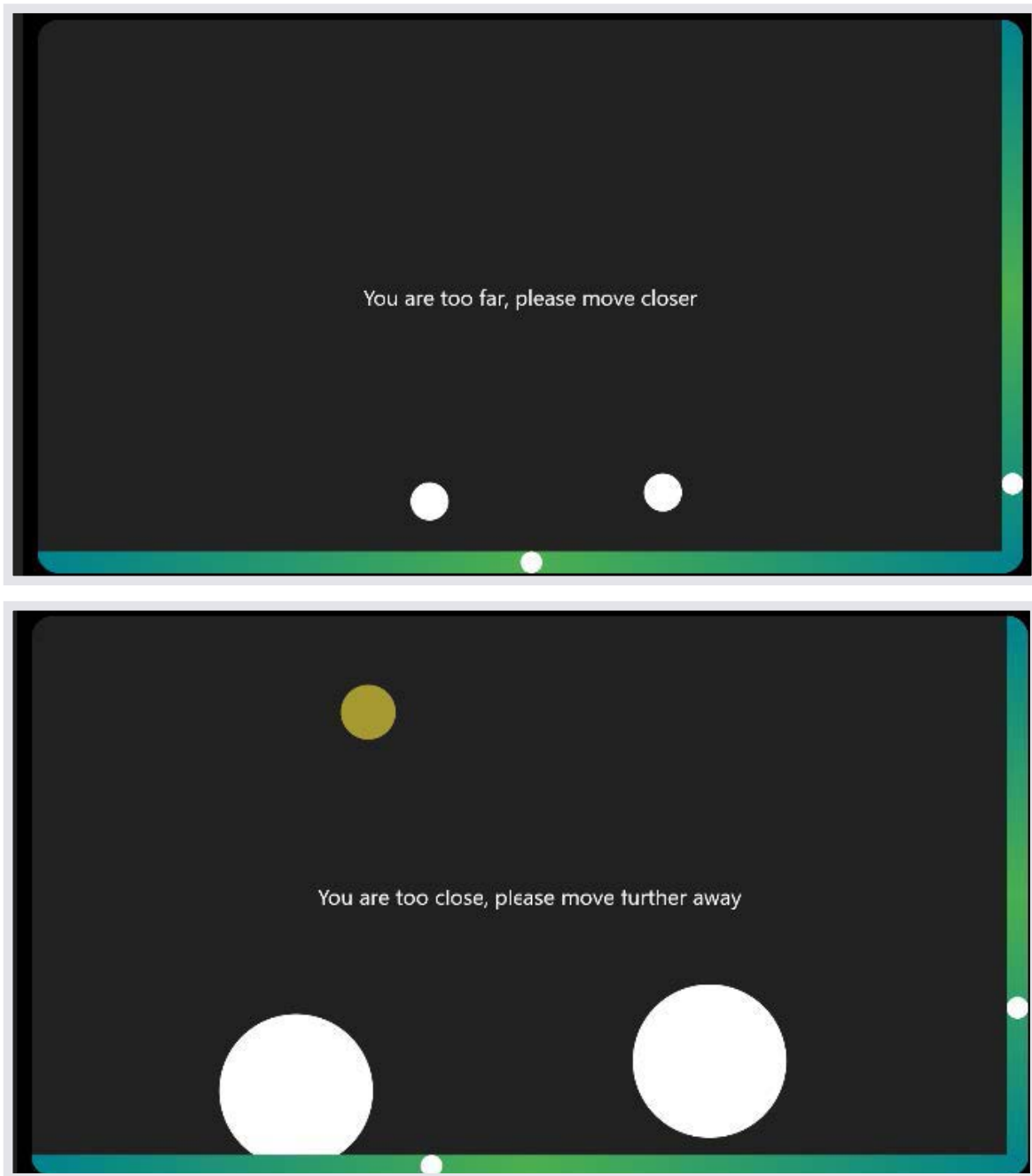
Each eye is unique and must therefore be calibrated to control the iPad. The calibration can be started directly on the start page of the App.



Before a calibration is started, it is possible to select how many points are to be used for the calibration. A higher number of points takes longer, but usually achieves more accurate results.

* For emerging eye gaze users a 1 or 2 point calibration is recommended.

Please make sure that the positioning is correct. If you are too close or too far away, this will be displayed. The bar on the right and bottom indicate whether the user is centered both horizontally and vertically.



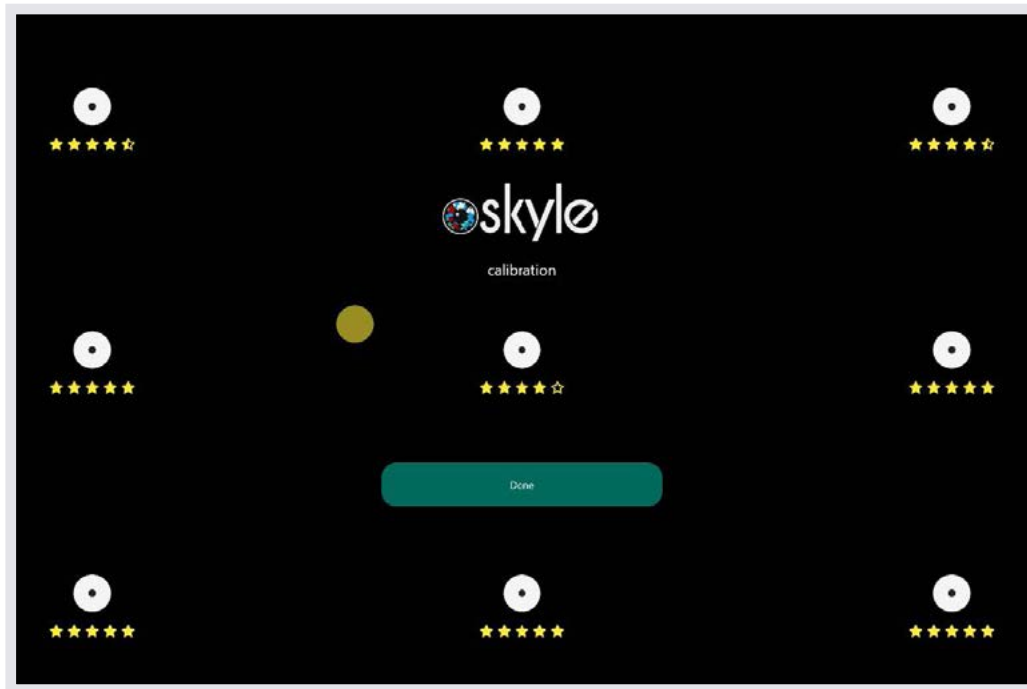
Calibration starts automatically as soon as a correct position is kept for a certain time.

* Calibration can also be started instantly by selecting "Start".

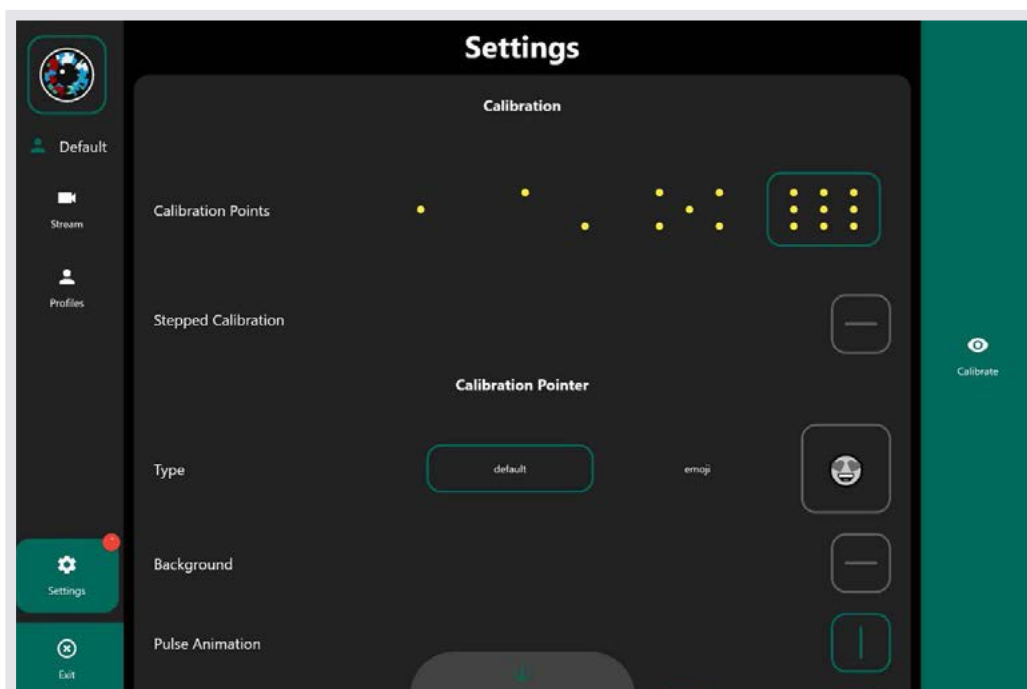
Once this is done, the cursor jumps to 1-9 different positions which the user must focus on. Please focus on the center of the circle. The appearance of the cursor can also be on customised in the App settings.



Once the calibration is finished, these points are displayed on the screen. Please check in this step if the accuracy is satisfactory or repeat the calibration. When nothing is detected, the calibration will end after a timeout of 100 seconds and uses the previous calibration profile.



In the App Settings you can switch the standard calibration method between a 1-, 2-, 5- and 9-point calibration.



Additional Features

Step by Step Calibration / Stepped

The calibration can also be done step by step, when a touch of the screen advances the calibration point. You can activate this option under “Settings -> Calibration”.

Help to improve the eye tracking algorithm

If “Record Calibration” is activated, test data is uploaded after completion of a calibration. This is used to improve the eye tracker.

Record a sample calibration to improve eyetracking

↑ We are constantly working on the improvement of the Eyetracker. You can support us by sending us sample images captured by the eyetracker.

🔒 Your participation is voluntary and takes place on the basis of your express consent. Please read our privacy policy carefully before proceeding. (this is the link)

🔔 If a new update is available, we will inform you personally or through the app regarding the update.

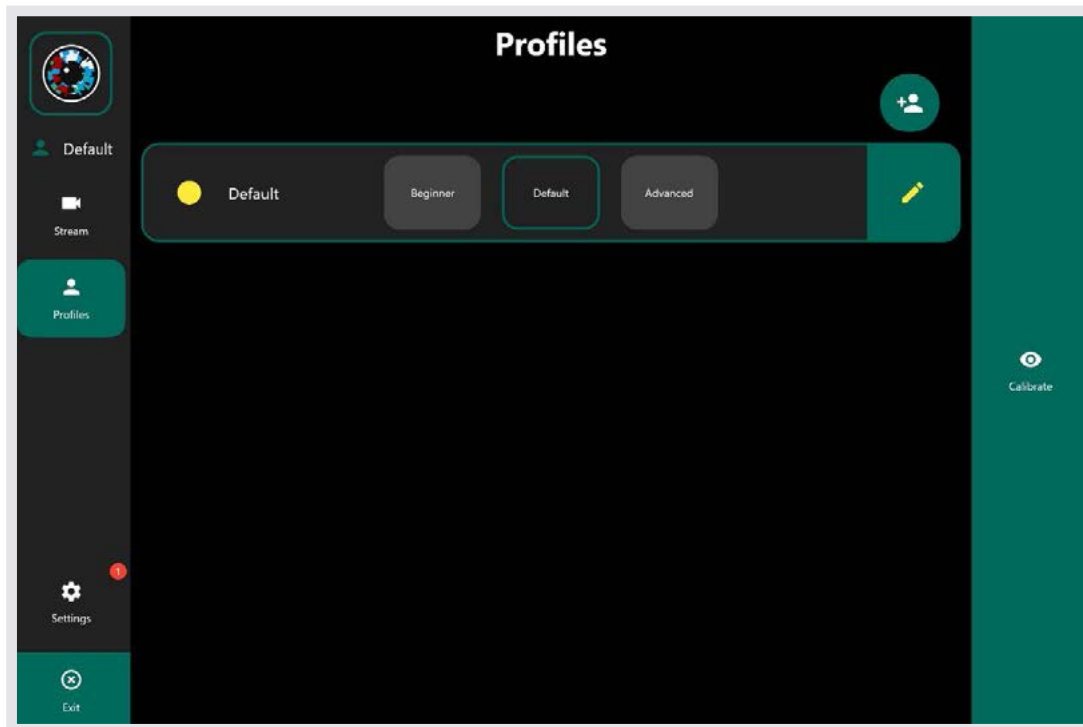
Your age: < 16 > 16

Do you want to transmit images of yourself to us in the following or do you perform this function for another person visible on the Images? Own images Images of another person

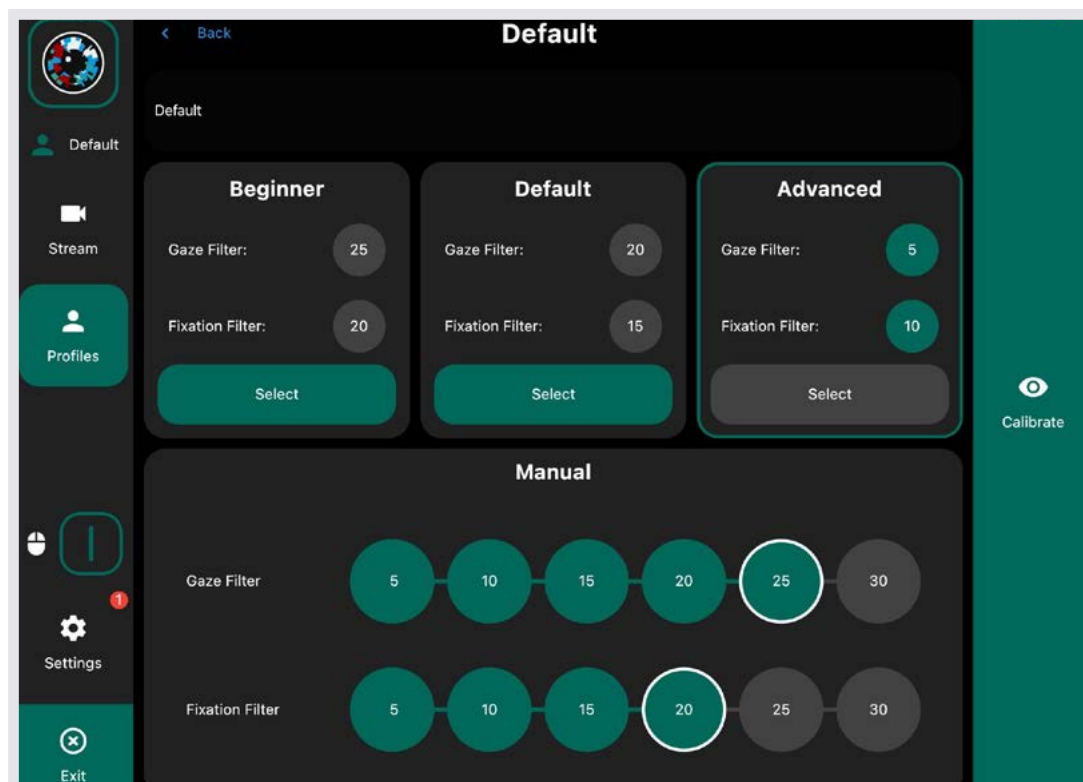
Next

Profiles

Profiles can be created for each individual accessing Skyle 2 for iPad Pro. Profiles can be used to store respective calibrations and personalise filter settings and sensitivity.



The Gaze Filter determines the tracking speed and smoothness of the user's gaze point. The Fixation Filter adjusts the steadiness of the gaze point when a fixation is taking place.



Gaze Selection

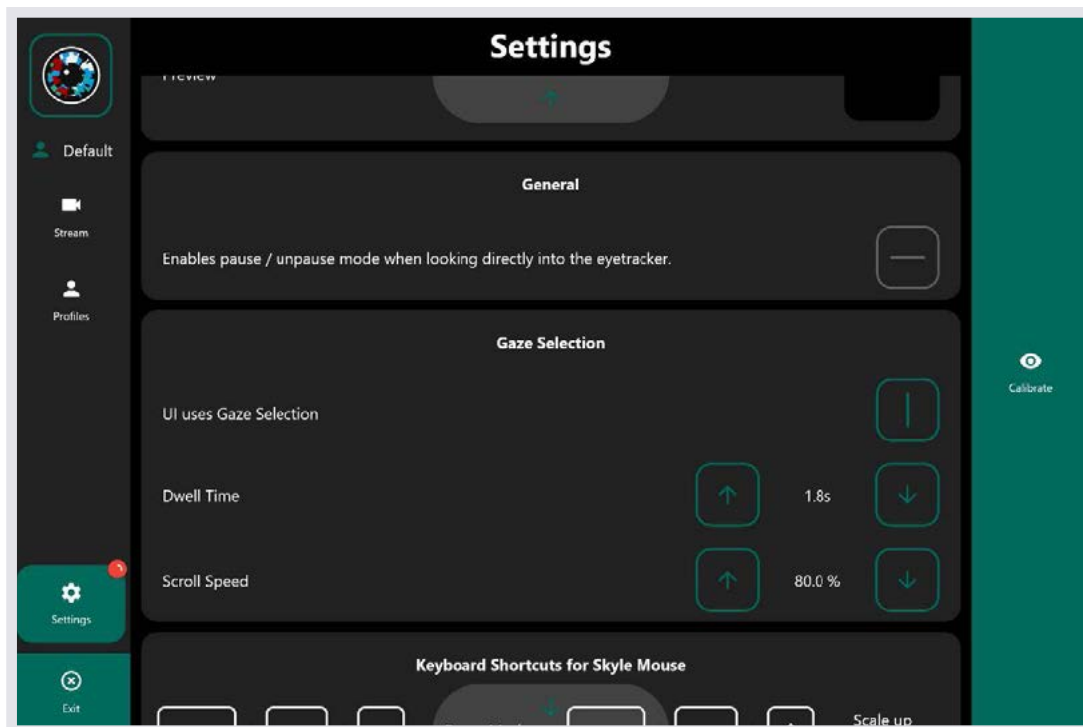
These settings affect the behaviour of the dwell control.

UI uses Gaze Selection

The “UI uses Gaze Selection” setting enables/disables the user’s ability to make selections in the Skyle X App using their gaze. This feature can only be toggled using touch, and not with dwell selection; To avoid accidentally disabling the ability to make interactions using gaze selection in the Skyle X App. This feature cannot be changed if a users eye’s are detected.

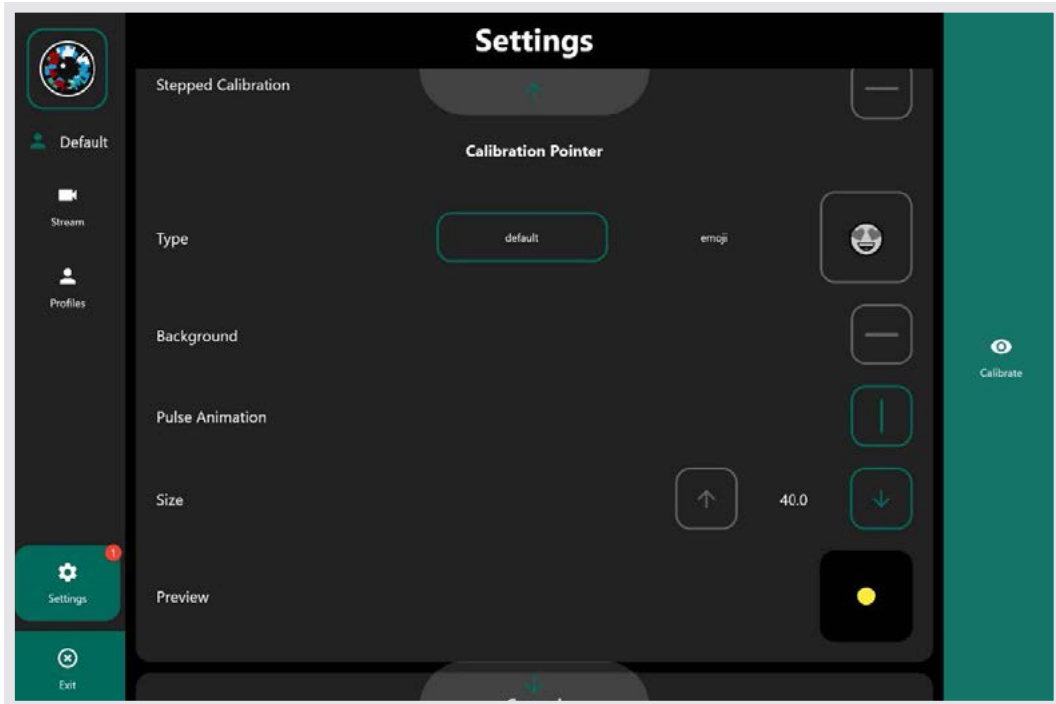
Dwell time and Scroll Speed

The dwell time determines the time a user must gaze at an option before a selection is made. This setting affects the dwell time in the Skyle X App only.



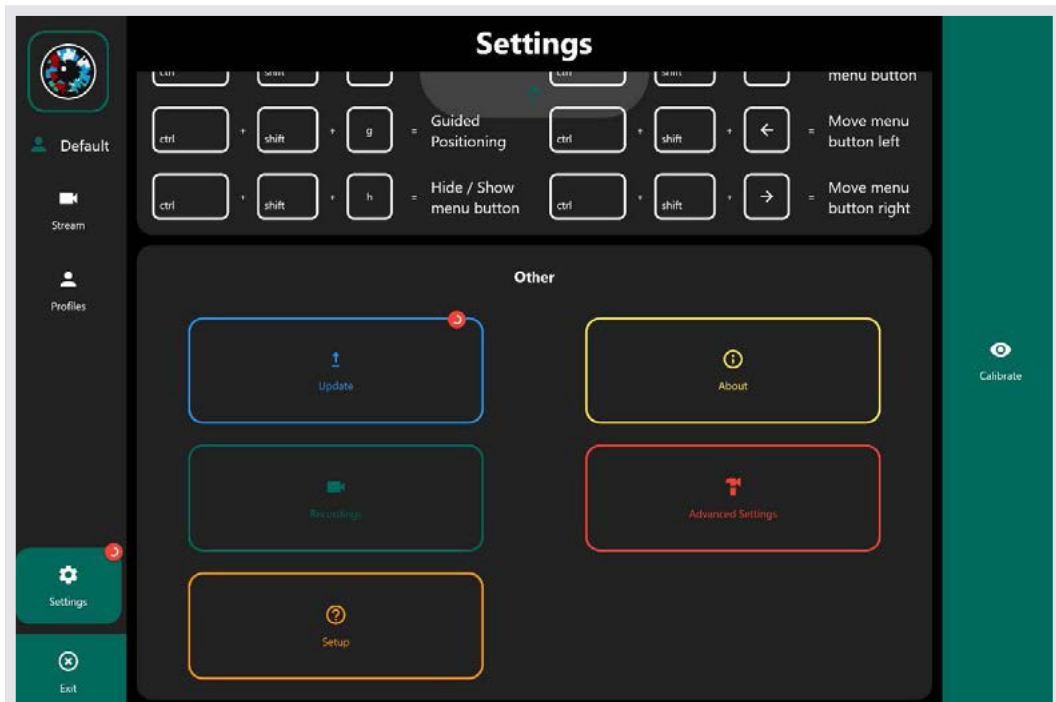
Calibration Pointer

The animation pointer during a calibration can also be adjusted to the user's needs. All changes are visible in the preview.



Update

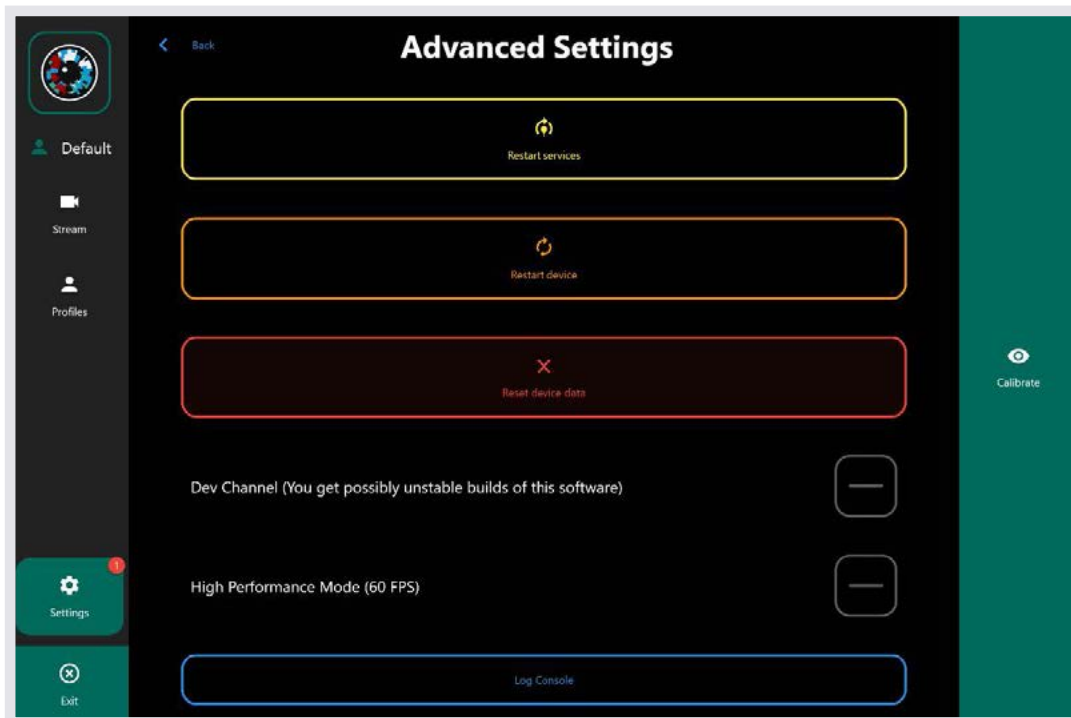
Updates for the eye control can be installed via the App. If a new update is available, a small red dot will appear in the left corner. The update can now be found in the settings under "Update".



If an update has been installed, the eye control will restart itself.

Advanced Settings

The advanced settings allow soft or hard reboot and factory reset.



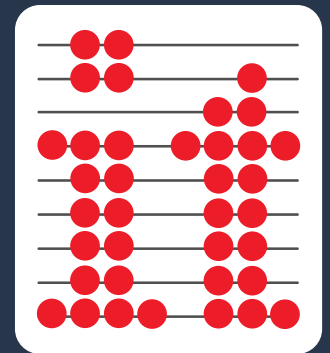
Improvement

If you're having issues, test data can be collected to improve the quality of the eye control. A 9-point calibration is performed during the collection ("Calibration->Recording calibration").

The test data recorded during this process can then be checked and sent off. If you want your data to be deleted, please send an email with the corresponding character string, which you can find in the App under "Settings -> Recordings".

Safety Instructions

Please observe the safety instructions supplied with the device.



Inclusive Technology

+44 (0) 1457 819790
inclusive@inclusive.co.uk
www.inclusive.co.uk