Mounting and Positioning for Gaze Interaction

How does eye tracking work?

The eye tracker sends out small amounts of light, creating reflections on the surface of your eyes. The camera in the eye tracker reads both the reflections and your pupils to track the movements of your eyes. If the eye tracker cannot consistently see the reflections or your pupils, then eye tracking accuracy is reduced.

The track box, shown in the picture on the right, is the area where the eye tracking camera can see your eyes clearly. You can move around within the track box, but remember that your eyelids partially cover the pupil when you look down. If you are having tracking issues, it can help to raise the device.

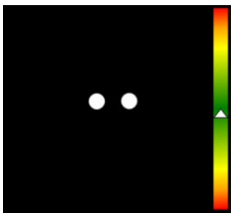
1. Position the user

- Start by positioning the user comfortably. You want to adjust the mount to suit the user, not the other way around.
- If the user is most comfortable tilted, reclining, or laying down, those are all fine positions! We will use the mounting solution to position the device appropriately in step 3.
- Make sure the user is wearing their glasses, if they need them, and that the lenses are clean.

2. Launch Track Status on the device

- **I-13 or I-16 devices**: touch the  button on the front of the device.
  I-12+ devices: press the middle button on the left side of the device (button 2).

  Any device: launch the Tobii Dynavox Eye Tracking Settings app and use the built-in Track Status window on the Calibration tab.



- Move the device closer or further away from the user until the white triangle is in the green area in the Track Status window.

3. Mount and position the device

- Orient the device so that the user can clearly see the screen and their eyes are within the Track Status box as shown on the left.
- If the user's head is tilted left or right, the device should also be tilted to match.

- If they are in a reclined position such as a chair that tilts or in bed, position the device higher using a mounting system such as a floor stand.

Open Track Status at the beginning of the day/session and periodically throughout to check the user's position and adjust the device position accordingly.

4. Calibrate

- Calibrate using your preferred eye tracking software. A perfect calibration score is not required to use eye tracking effectively!
- You do not need to calibrate each time you use the device, just make sure that the correct user profile is selected.

A calibration does not have to be green to be usable, so don't spend too long on it. Get started with your activity and revisit calibration later, after the user has gotten to practice using Gaze Interaction.

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Troubleshooting

Blinking or shifting dots in the Track Status window indicate that the eye tracker is unable to consistently identify the reflections on the eyes. This can be caused by bright overhead lights, bright sunlight, and reflective surfaces around or behind the user. Consider where you are positioned or if there is something you can do to minimize glare.

Most glasses and contact lenses can be used when eye tracking. Ensure that you calibrate with your glasses on, as the calibration will be different with and without. Larger lenses and frameless or partly frameless styles are best as they are less likely to block the eye. Frames that are sparkly or extremely shiny should be avoided.

Some users naturally have droopy eyelids, which can interfere with eye tracking if the device is in a low position. Try raising the device so that the user is looking straight ahead at the screen. This lifts the upper eyelid, so that the eye tracker can see the pupil more consistently.

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