

Tobii Pro Glasses 2

Product Description

Head Unit

Recording Unit

Prescription Lenses

Controller Software

Product Description Tobii Pro Glasses 2

Version 1.76

11/2017

All rights reserved.

Copyright © Tobii AB (publ)

The information contained in this document is proprietary to Tobii AB. Any reproduction in part or whole without prior written authorization by Tobii AB is prohibited.

Products that are referred to in this document may be either trademarks and/or registered trademarks of the respective owners. The publisher and the author make no claim to these trademarks.

While every precaution has been taken in the preparation of this document, the publisher and the author assume no responsibility for errors or omissions, or for damages resulting from the use of information contained in this document or from the use of programs and source code that may accompany it. In no event shall the publisher and the author be liable for any loss of profit or any other commercial damage caused or alleged to have been caused directly or indirectly by this document.

Content subject to change without notice.

Please check Tobii web site www.tobii.com for updated versions of this document.

Table of Contents

- 1 Introduction..... 1
- 2 System Overview 2
 - 2.1 Tobii Pro Glasses 2 Packages2
 - 2.2 System Components3
 - 2.3 Head Unit.....5
 - 2.4 Recording Unit.....5
 - 2.5 Prescription Lenses6
- 3 Technical Specifications 8
 - 3.1 Eye Tracking8
 - 3.2 Head Unit.....8
 - 3.3 Recording Unit.....8
 - 3.4 Prescription Lenses (Option)9
 - 3.5 Compliance.....9
 - 3.6 Compatible Software9
 - 3.7 Controller Software — Feature overview.....9
 - 3.8 Controller Software — Minimum system requirements9
- Appendix A Safety and Compliance..... 10

1 Introduction

Tobii Pro Glasses 2 is the next generation wearable eye tracking tool which gives researchers the possibility to capture truly objective and deep insights into human behavior in any real-world environments. Pro Glasses 2 shows exactly what a person is looking at in real time while the test person moves freely in a lab, shop, a restaurant or any locations. The product consist of a head unit, a recording unit and a controller software. This document describes the main technical features of the Tobii Pro Glasses 2 product.

Intended use:

Pro Glasses 2 is intended to be used in research activities about human behavior including eye movements, involving adult participants in a dry and dust free indoor environment. The product should only be used as described in the user manual. Please read the User's Manual and other supplied documentation thoroughly before using the product.



This product is continuously being developed and refined. Please visit www.tobii.com for the most recent specifications for the software and for the latest version of this document.



2 System Overview

2.1 Tobii Pro Glasses 2 Packages

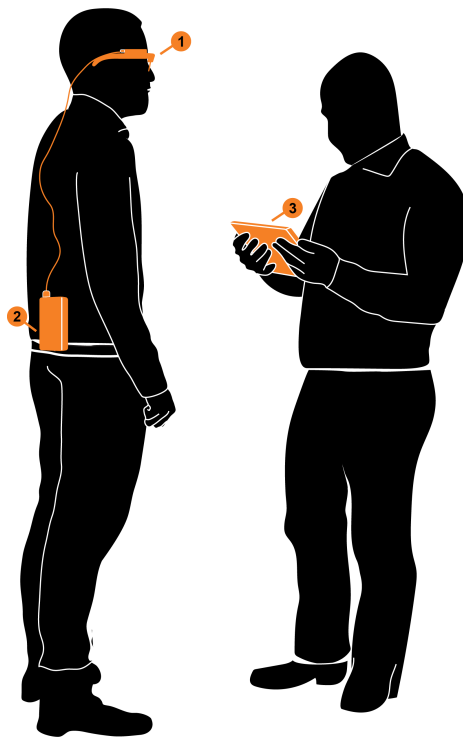
Tobii Pro Glasses 2 is sold in seven different packages. An overview of the package contents is presented in the table below.

Components	Live View Package 50	Live View Package 100	Live View Wireless Package 50	Live View Wireless Package 100	Premium Package 50	Premium Package 100	Subscription Package
Head unit	•	•	•	•	•	•	•
Recording unit	•	•	•	•	•	•	•
50 Hz	•		•		•		•
100 Hz		•		•		•	•
Protective lenses (2 pcs) - 1 clear and 1 tinted	•	•	•	•	•	•	•
Nose pads in different sizes (6 pcs)	•	•	•	•	•	•	•
Head strap	•	•	•	•	•	•	•
Rechargeable Li-ion batteries type 18650 (4 pcs)	•	•	•	•	•	•	•
Battery charger for Li-ion batteries + power cables (EU, US, UK + AUS)	•	•	•	•	•	•	•
USB charger for recording unit + power plugs (EU, US, UK + AUS)	•	•	•	•	•	•	•
SD memory cards (3 pcs) + sleeves + SD/USB adapter	•	•	•	•	•	•	•
Calibration cards (3 pcs)	•	•	•	•	•	•	•
Calibration stickers (10 pcs)	•	•	•	•	•	•	•
Carry case for Tobii Pro Glasses 2	•	•	•	•	•	•	•
USB memory stick with documentation and software	•	•	•	•	•	•	•
Safety and compliance document (printed)	•	•	•	•	•	•	•
User's manual (PDF)	•	•	•	•	•	•	•
Quick start guide (printed and PDF)	•	•	•	•	•	•	•
HDMI A to HDMI D cable	•	•	•	•	•	•	•
Ethernet cable (3 meters)	•	•	•	•	•	•	•
USB to micro USB cable for recording unit charging	•	•	•	•	•	•	•

Controller software	•	•	•	•	•	•	•
SD Card Reader	•	•	•	•	•	•	•
Tobii Pro Lab ¹					•	•	•
WLAN functionality			•	•	•	•	•
Windows 10 tablet					•	•	
One day onsite installation and startup training ¹					•	•	
Tobii Care ¹					•	•	•

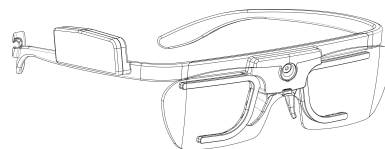
2.2 System Components

The Tobii Pro Glasses 2 system is made up of several components. Each component is briefly described below.



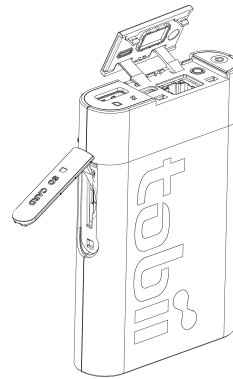
The system includes:

1. A wearable eye tracker (glasses), referred to as the head unit.



¹. See separate product description for details.

2. A recording unit, connected to the head unit via an HDMI cable.
The recording unit holds the battery and stores the recorded data on an SD memory card. The recording unit is controlled from a tablet or computer running controller software.



3. A Windows 8 or later tablet² or computer with Windows 7 or later running the controller software. The software allows for managing participants, controlling the eye tracker and viewing both real-time and recorded eye tracking data. The software connects to the eye tracker through an Ethernet connection (either wireless or wired).
4. Tobii Pro Lab³ (optional) installed on a Windows computer. Any eye tracking analysis beyond qualitative analysis of eye tracking session replay, is carried out using Tobii Pro Lab.



The recording unit contains radio transmitters and receivers (WLAN). Make sure that it is placed as far as possible from any equipment, objects or body parts sensitive to such signals.



The head unit is designed to connect only to the recording unit and should not be connected to any other device.



The recording unit is designed to connect only to the head unit and a Windows 8 or later Pro tablet or any tablet/computer with Windows 8 or later tablet or computer with Windows 7 or later running the controller software. The recording unit should not be connected to any other devices.



Tobii Pro Glasses Controller Software is designed to be used only with Tobii Pro Glasses 2. No other types of eye trackers can or should be used together with the controller software.



Tobii Pro Glasses Controller Software is designed to be installed and used on Windows 8 or later Pro tablets or any Windows 8 or later tablet, or a computer with Windows 7 or later. The software should not be installed on any other types of devices.

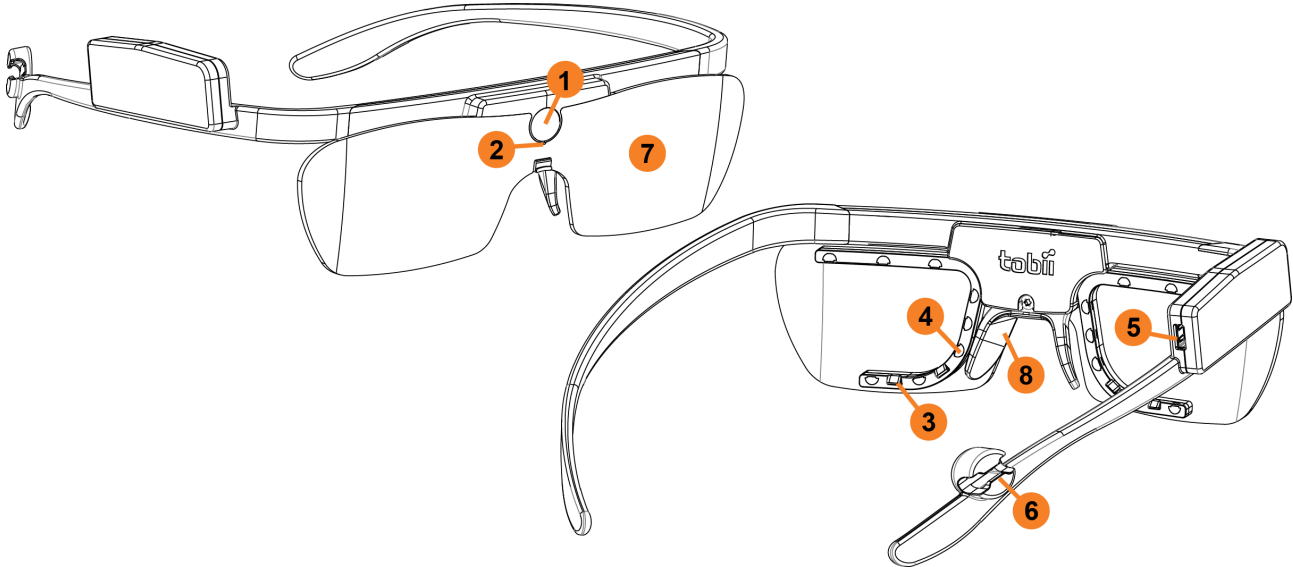
2. Only included in the Tobii Pro Glasses 2 Premium Package. Must be purchased separately for all other packages.

3. Only included in the Tobii Pro Glasses 2 Premium and Subscription packages. Must be purchased separately for all other packages.

2.3 Head Unit

The head unit is a highly sophisticated measuring device. It consists of several very sensitive sensors and must be cared for as instructed for it to work properly.

The head unit consists of the following parts:



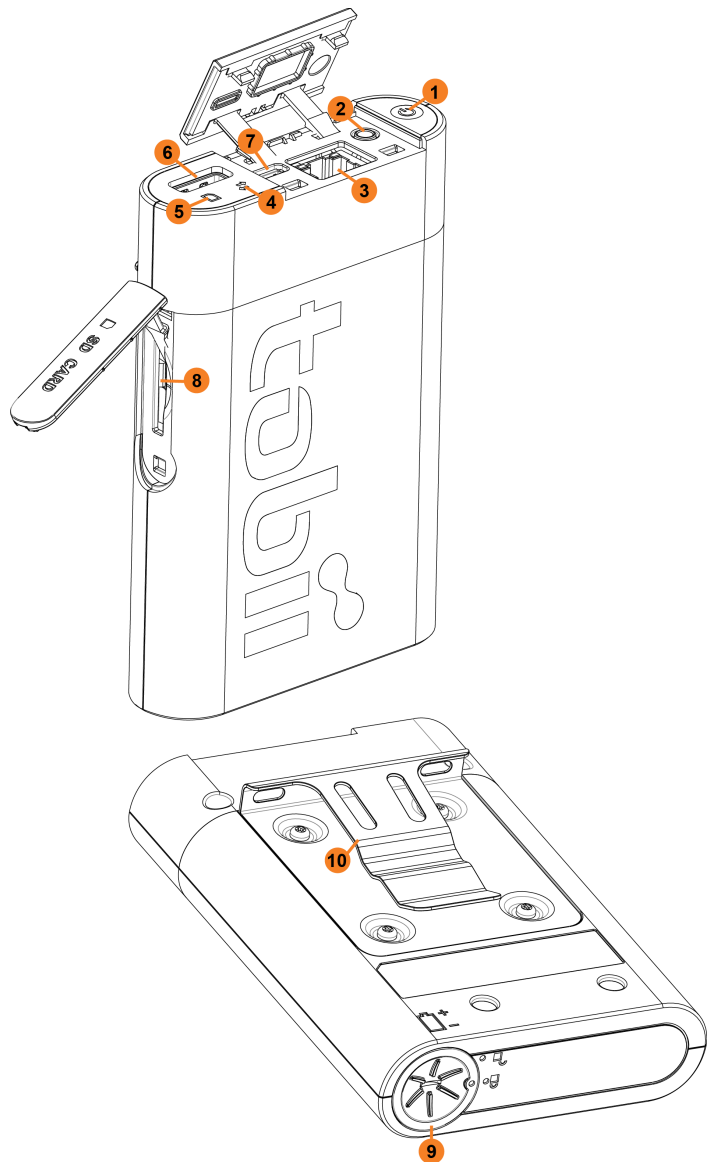
1. **High-definition scene camera** – Captures a Full HD video of what is in front of the participant.
2. **Microphone** – Picks up sounds from the participant and its surroundings.
3. **Eye tracking sensors** – Records eye orientation e.g. the direction of the eye gaze.
4. **IR illuminators** – Illuminates the eyes to support the eye tracking sensors.
5. **Micro HDMI connector** – Connects to the recording unit via the supplied HDMI cable.
6. **Cable guide** – Guides the HDMI cable towards the participant's back.
7. **Protective lens** – Both clear and tinted versions supplied
8. **Nose pad** – Exchangeable and available in different sizes.


2.4 Recording Unit

The recording unit is a small computer that controls the head unit (the eye tracking glasses). It records and stores eye tracking data, sounds and scene camera video on a removable SD memory card. The recording unit carries a replaceable and rechargeable Li-ion battery that supplies power to both the recording unit and the head unit. The recording unit has several connectors and a power button and is controlled from the controller software.

The recording unit consists of the following parts:

1. **Power button and power indicator LED** - Touch button that turns the recording unit on and off. LED indicates power state and remaining battery power.
2. **3.5 mm connector for data synchronization** - TTL pulse for synchronization with external data sources.
3. **LAN port** - Connects to a Windows tablet or computer running the controller software, via the supplied Ethernet cable. The recording unit can also be connected to the tablet or computer via WLAN⁴.
4. **Connection status LED** - Indicates connection to the controller software.
5. **SD card Activity LED** - Indicates if SD memory card is present and if the recording unit is busy writing on the SD memory card.
6. **HDMI connector** - Connects to the head unit via the supplied HDMI cable.
7. **Micro USB connector** - Connects to USB charger for powering the unit and charging the battery.
8. **SD memory card slot** - Slot for SD memory card for storage of recorded data.
9. **Battery compartment** - Holds the battery for the recording unit and the head unit
10. **Belt clip** - For attaching the recording unit to participant's belt.



 The package contains an external SD card reader for users using computers not equipped with an internal SD card reader. For installation instructions, see the documentation in the SD card reader's package or the manufacturer's website.

2.5 Prescription Lenses

In order to accommodate the head unit to a larger user audience, Tobii has developed a set of dedicated prescription lenses, supplied as a separate kit (optionally available), for correction of either short-sightedness or long-sightedness. The prescription lenses are magnetically fitted onto an adapter on the head unit and the participant can then walk around freely with a corrected sight.

The set also contains two zero strength lenses for both the right and left side for use in the case the participant only need correction on one side. Included in the kit is one spare magnetic attachment adapter and a convenient storage compartment for the participant's own glasses to keep them well protected during the survey.

4. Not available in the Tobii Pro Glasses 2 Live View Package.

The procedure for selecting suitable prescription lenses is easy and straight-forward. Either the participant is already aware what glasses strength he/she uses, if so, it is easy to fit the prescription lenses of the corresponding correction value. If the participant does not know, the kit contains a reading chart that assists you in selecting the most suitable correction strengths.



The addition of a lens element in front of the head unit may create a small optical offset which should be accounted for.



If you need prescription lenses of a strength that are not included in the standard package, prescription lenses with sun protection or any other custom made lenses, please contact Tobii sales for a quote.

3 Technical Specifications

3.1 Eye Tracking

Eye tracking technique	Corneal reflection, dark pupil
Binocular eye tracking	Yes
Sampling rate	50 Hz or 100 Hz
Calibration procedure	1 point
Parallax compensation tool	Automatic
Slippage compensation	Yes, 3D eye tracking model
Pupil measurement	Yes, absolute measure

3.2 Head Unit

Material	Grilamid plastic, stainless steel, aluminum
Protective lens	Plastic, in 2 versions: clear and tinted
Interchangeable lenses	Yes
Nose pad	Grilamid plastic, interchangeable
Scene camera, video resolution	1920 × 1080 at 25 fps
Scene camera, video format	H.264
Scene camera, field of view	90 deg. 16:9 format
Scene camera horizontal and vertical FOV (approx.)	82 deg. horizontal / 52 deg. vertical
Weight	45 grams including protective lens
Frame dimensions (width × depth × height)	179 × 159 × 57 mm
Cable length	1200 mm
Visual field of view (frame obstruction)	More than 160 deg. horizontally, 70 deg. vertically
Audio	Integrated microphone
Design characteristics	Light weight and discreet
Number of eye tracking sensors	4 sensors
Fixed geometry	Yes
Sensors	Gyroscope and accelerometer

3.3 Recording Unit

Battery recording time	120 min.
Battery type	Rechargeable 18650 Li-ion, Capacity: 3 400 mAh
Storage media	SD (SDXC, SDHC) card
Connectors	HDMI, Micro USB, 3.5 mm jack
Dimensions (height x width x depth)	130 x 85 x 27 mm

Weight	312 grams
Sync Port	3.5 mm jack (TTL signal)

3.4 Prescription Lenses (Option)

Correction lenses	34 pcs., ranging from –5.0 dpt. to +3.0 dpt. in increments of 0.5 dpt. Made of plastic with hard coating.
Magnetic lens attachment adapter	2 units, made of plastic
Dimensions (height x width x depth)	80 x 270 x 370 mm (complete kit)
Weight	1 150 grams (complete kit)

3.5 Compliance

Ingress protection	IP class 20
CE - European Union	Yes
FCC - USA	Yes
CCC - China	Yes
VCCI - Japan	Yes
Eye Safety (EN 62471:2008)	Yes
Underwriters Lab US (UL 60950)	Yes

3.6 Compatible Software

Recording and live viewing	Tobii Pro Glasses Controller Software
Data analysis and export	Tobii Pro Lab Software

3.7 Controller Software — Feature overview

- Manage participants
- Manage recordings
- Live viewing of recordings
- Instant replay of recordings
- One point calibration
- WLAN configuration settings — connect to existing wireless networks
- Recordings playable from local medias
- Gaze based exposure (Gaze spot meter) possible
- Eye image video possible
- Switch between 50/100 Hz sampling rate (only with 100 Hz Pro Glasses 2)

3.8 Controller Software — Minimum system requirements

Operating System: Windows 7, 8, 8.1 and 10 (32 bit and 64 bit)

CPU: Intel Core i5

Resolution: 1024 × 768

Memory: 2 GB

Appendix A Safety and Compliance

A1 Safety and Usage

A1.1 Usage Warning



The Tobii Pro Glasses 2 system is composed of several components as described in the user manual and should be used according to manufacturer instructions. Connecting, or by other means using any other component than advised in the user manual may damage or injure a person, their property or recorded data, and is done entirely at the user's own risk.

The head unit should be fitted on the test participant according to manufacturer instructions. Tobii or its agents are not liable for damage or injuries to a person or their property due to a head unit being dropped in any configuration. Fitting the head unit onto a test participant is done entirely at the user's own risk.

The head unit is equipped with a head strap to enable tighter mounting of the head unit onto the wearer's head. Neither Tobii nor its agents are liable for damages or injuries to a person or their property caused by the head unit's head strap

A1.2 Emergency Warning



The Tobii Pro Glasses 2 system is to be used for research purposes only. Be aware that due to the low, but possible risk of failure or distraction, Pro Glasses 2 should not be relied upon or used in dangerous or otherwise critical situations.

A1.3 Child Safety



The Tobii Pro Glasses 2 system is an advanced computer system and electronic device. As such it is composed of numerous separate, assembled parts. In the hands of a child some of these parts may become detached from the device, possibly constituting a choking hazard or another danger to the child.

Young children should not have access to, or use of the device without parental or guardian supervision.

A1.4 Infrared Warning



When activated, the head unit emits pulsed infrared (IR) light. Certain medical and other devices are susceptible to disturbance by IR light and/or radiation. Do not use the Tobii Pro Glasses 2 system when in the vicinity of such susceptible devices as their accuracy or proper functionality could be impaired.

A1.5 Epilepsy Warning



Some people with photosensitive epilepsy (PSE) are susceptible to epileptic seizures or loss of consciousness when exposed to certain flashing lights or light patterns in everyday life. This may happen even if the person has no medical history of epilepsy or has never had any epileptic seizures.

A person with PSE would also be likely to have problems with TV screens, some arcade games, and flickering fluorescent bulbs. Such people may have a seizure while watching certain images or patterns on a monitor, or even when exposed to the light sources of an eye tracker. It is estimated that 3 to 5% of those diagnosed with epilepsy have this type of epilepsy. Many people with PSE experience an "aura" or odd sensations before a seizure occurs. If you, or the wearer of the head unit, feel odd during use, turn off and remove the head unit.

A1.6 Mechanical Shock Warning



The Tobii Pro Glasses 2 system is a delicate measuring instrument used for research purposes and should be treated with care at all times. To avoid breaking or damaging the internal electronic circuits, do not drop, knock, or shake the device. Eye tracking quality or accuracy can be seriously affected if the head unit or recording unit has been dropped. If the eye tracker is exposed to mechanical shock, for example, when dropped, do not try to start it or connect it to a power source. Contact Tobii Support for instructions.

A1.7 Bending Warning



To avoid breaking or damaging the internal electronic circuits, do not bend any part of the eye tracking system. Eye tracking quality or accuracy can be seriously affected if the head unit or recording unit has been bent.

A1.8 Do not open the devices



Do not open or disassemble the head unit or the recording unit. Non-compliance will result in loss of warranty! There are no user serviceable components inside. Contact Tobii Support if Tobii Pro Glasses 2 is not working properly.

A1.9 Connectors



The head unit and recording unit have numerous external interfaces (connectors). Connecting any other device or connector than those intended may cause personal injuries and/or damage Tobii Pro Glasses 2. Tobii or its agents are not liable for any damages or injuries to a person or their property due to connecting unintended connectors.

A1.10 HDMI Cable Warning



The provided HDMI cable should only be used to connect the head unit with the recording unit. Do not use the HDMI cable for any other purpose or for connecting to any other devices. Only use HDMI cables provided by Tobii to connect the head unit with the recording unit. Tobii or its agents are not liable for any damages or injuries to a person or property due to wrong use of the provided cables.

A1.11 Environment



The Tobii Pro Glasses 2 system is designed for use in dry indoor environments. Avoid any exposure to direct sunlight as this will affect eye tracking quality and longer exposure can overheat the equipment. Avoid exposure to any liquids, gels, moist, rain, sweat or other damp materials or environments. Do not use the eye tracker near water — the device is not water resistant.

The device complies with IP Class 20 and has no protection against objects smaller than 5 mm. Keep the eye tracker in a clean and dust free environment. When using the equipment take adequate precautions against dust and dirt.

Do not place or use the equipment in places subject to extreme temperatures and humidity, such as on top of and or near a heating element, in a hot or damp room, or in a hot automobile in the sun. Usage temperature: 0°C to +30°C / 32°F to 86°F

A1.12 Battery Warning



The Tobii Pro Glasses 2 system includes rechargeable Lithium-ion batteries. Lithium-ion batteries can explode or cause a fire if they are used or charged incorrectly or if they are defective.

Do not short circuit the battery poles. Do not expose the battery to water or humidity. Do not expose batteries to heat, direct sunlight, solder, or fire. Immediately disconnect the batteries if, during operation, they emit an unusual smell, feel hot, change shape/dimensions, or behave abnormally. Do not use any defective batteries.

To recharge the batteries, use a battery charger specifically designed for the purpose and comply with the recharging instructions specified by the manufacturer of the charger. Charge the batteries under supervision and do not place combustible materials close to or on top of the batteries or the charger as this may result in overheating, explosion or fire.

CAUTION: Danger of explosion if battery is incorrectly replaced. If replacing the battery is necessary, replace only with the same or equivalent type recommended by the manufacturer, discard used batteries according to the manufacturer's instructions.

Avertissement relatif aux batteries

Le système Tobii Pro Glasses 2 système comporte des piles lithium-ion rechargeables. Les batteries lithium-ion peuvent exploser ou provoquer un incendie si elles sont utilisées ou chargées de façon incorrecte ou si elles sont défectueuses.

Ne pas court-circuiter les pôles de la batterie. Ne pas exposer la pile à l'eau ou à l'humidité. Ne pas exposer les batteries à la chaleur, à la lumière du soleil, une soudure ou un feu. Déconnecter immédiatement les batteries si, pendant le fonctionnement, elles émettent une odeur inhabituelle, sont chaudes, changent de forme/dimensions ou se comportent de manière anormale. Ne pas utiliser des batteries défectueuses.

Pour recharger les batteries, utiliser un chargeur spécialement conçu à cet effet et se conformer aux instructions de recharge fournies par le fabricant du chargeur. Recharger les batteries sous surveillance et ne pas placer de matériaux combustibles à proximité ou au-dessus des batteries ou du chargeur en raison du risque de surchauffe, d'explosion ou d'incendie.

ATTENTION: Danger d'explosion si la batterie est mal remplacée. Remplacer uniquement par le même type ou équivalent recommandé par le fabricant, jeter les piles usagées selon les instructions du fabricant.

A1.13 Wireless Warning



The Recording Unit contains radio transmitters and receivers (WLAN). Make sure that it is placed as far as possible from any equipment, objects or body parts sensitive to such signals.



電波法により5GHz帯は屋内使用に限ります。

A1.14 Transportation



Always use the supplied carry case and packaging material to transport the eye tracking equipment and provide added protection.

A1.15 Accessories



Only use accessories provided by or approved by Tobii.

A1.16 Cleaning



Before cleaning any part of the Tobii Pro Glasses 2 system, unplug the power cord from the outlet and make sure the device is turned off. Both the head unit and recording unit have surface coatings that require special care. Only use the supplied microfibre cleaning cloth or similar products specially intended for cleaning screens or glass with a special coating. Avoid touching or scratching the glass and the eye tracking sensors and illuminators on the head unit and keep all the surfaces clean. Eye tracking quality may be degraded if surfaces are dusty or damaged. Some plastic parts, such as the ear pieces and the nose pads, can be cleaned with water or disinfectant applied on a piece of soft cloth. Avoid contact with any other parts such as the illuminators, sensors and all electronic components.

A1.17 Disposal



Do not dispose of the device in general household or office waste. Follow local regulations for disposal of electrical and electronic equipment.

Do not dispose of the batteries in general household or office waste. Follow your local regulations for the disposal of batteries.

A2 Compliance Information



All Tobii Pro Glasses 2 are CE-marked, indicating compliance with the essential health and safety requirements set out in European Directives.

この装置は、現在設置されている場所で妨害波の測定がされた情報技術装置です。この場所以外で使用する場合は、その場所で、再び妨害波の測定が必要となります。



Conforms to ANSI/UL Std. 60950-1

Certified to CSA Std. C22.2 No. 60950-1

A2.1 Federal Communication Commission Interference Statement

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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into a wall outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or experienced radio/TV technician for assistance.

A2.2 Canadian Compliance Statement

CAN ICES-3(B)/NMB-3(B).

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

A2.3 EU Compliance Statement

Tobii AB declares that this device is in compliance with the essential requirements and other relevant provisions of the R&TTE and EMF Directive.

A2.4 Declaration of Conformity (Standards)

The Tobii Pro Glasses 2 Recording unit and its handling comply with the following standards:

- EMC Emission: EN55022:2010 Class B, FCC part 15, Class B
- EMC Immunity: EN55024:2010
- SAR EN62311:2008
- Low Voltage Directive 2006/95/EEG
- EMC Directive 2004/108/EC
- Radio and Telecommunications Terminal Equipment Directive (R&TTE) 1999/5/EC
- RoHS Directive 2002/95/EC
- RoHS2 Directive 2006/121/EC
- WEEE Directive 2002/96/EC
- Reach Directive 2006/121/EC
- China RoHS Directive
- CFR 47 (FCC) part 15, Class B
- Canadian ICES-003
- Japan TCM mark (WLAN) [Ref 4]
- Japan VCCI mark
- IEC/EN/UL60950-1:2005 (Electrical safety for global/EU/US)

A3 Other limitations and considerations

A3.1 Intended use



Tobii Pro Glasses 2 is intended to be used in research activities about human behavior including eye movements, involving adult participants in a dry and dust free indoor environment. The product should only be used as described in the user manual. Please read the user manual and other supplied documentation thoroughly before using the product.

A3.2 SD memory cards



SD memory cards used in the recording unit must be formatted as FAT32. SDHC cards are usually pre-formatted as FAT32 and will work out of the box while SDXC cards must be formatted as FAT32 before they can be used with the recording unit. Only use SD cards recommended by or supplied by Tobii.

A3.3 Multiple connections between the controller software and the recording unit



Under no circumstances should the tablet or computer running the controller software connect to the same recording unit using both a wireless and a wired connection at the same time.

A3.4 Eye movement classification



Gaze presented in Live Viewer and replay tabs of the controller software is filtered through a five-point moving average filter. Such filters do not entirely mimic true eye movement behavior and fixations may seem to dynamically shift locations. This has no significant impact for qualitative observational analysis in the controller software. When data is transferred to Tobii Pro Lab, only raw, unfiltered data is transferred, giving the analyst full access to more advanced eye movement classification filters suitable for quantitative analysis of gaze data.

A3.5 Sampling rate



A 100 Hz eye tracker will eye track on a smaller viewing area than the equivalent 50 Hz eye tracker. For extreme viewing angles, the user might get 50 Hz data from a 100 Hz eye tracker.

A3.6 Light conditions



We recommend that eye tracking studies be performed in a controlled and well-lit environment. Sunlight should be avoided since it contains high levels of infrared light which will interfere with the eye tracker system. Sunlight affects eye tracking performance severely and longer exposure can overheat the eye tracker. The eye tracker is not designed for exposure to (direct) sunlight. Eye tracking generally does not work in strong direct sunlight. Shielding the eye tracker adequately from the sun may prevent sunlight from interfering with eye tracking. For better performance, use the supplied tinted lenses if the product is used in an environment with strong sunlight..

A3.7 Eyelashes



Long eyelashes can be obstructive when the participant's eyes are less open, especially if the participant is wearing mascara. In rare cases, eyelashes may completely block the view of the participant's pupils, making eye tracking impossible.

A3.8 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.

A3.9 Eye glasses and contact lenses



Tobii Pro Glasses 2 is not designed to work in conjunction with standard eye glasses. Participants who wear eye glasses might still be included in the study by using Tobii Pro's optional Prescription Lenses. By attaching correction lenses of a suitable strength, the participant can wear Glasses 2 and still have a corrected vision. See the section 2.5 *Prescription Lenses* Prescription Lenses.

Standard contact lenses may slightly increase noise but do not normally introduce any errors in the data. Colored or fancy lenses that change the appearance of the pupil or iris should be avoided as they might make eye tracking impossible.

A3.10 WLAN connectivity



WLAN signal quality is affected by different environmental factors such as the distance between the recording unit and the tablet/computer, the presence of walls, windows, furniture and other objects, and the presence of other WLAN devices and networks in the same area. A weak or low quality WLAN signal will decrease the quality of, or even interrupt the Live Viewing video in the controller software or even disconnect the recording unit from the tablet/computer.

A3.11 Power



We recommend that you connect the power cord of the chargers to an outlet with a protective earth/ground connection. Use an accessible outlet and make sure the cords are properly placed to avoid the risk of tripping. Never use damaged power cords.



The Recording unit is intended to be supplied power by a UL Listed Adapter rated 5V, 2A min.

A3.12 Keeping the controller software and the recording unit's firmware up to date



From time to time Tobii will release updates for the eye tracker firmware and Tobii Pro Glasses Controller Software that will improve performance and/or introduce new functionality. When a new version of Tobii Pro Glasses Controller Software or the recording unit's firmware is available, the user will be notified with an alert symbol at the top of the user interface if the computer is online. Alternatively, the latest firmware and software can be downloaded from the Tobii Pro Support website <http://www.tobii.com/learn-and-support> Make sure to regularly check for and update to the latest version of the software and firmware.



©Tobii®. Illustrations and specifications do not necessarily apply to products and services offered in each local market. Technical specifications are subject to change without prior notice. All other trademarks are the property of their respective owners.

Tobii Pro Support

EUROPE / GLOBAL

Phone (SWE): +46 8 522 950 10
Phone (GER): +49 69 24 75 03 4-27
support@tobii.com
Support hours: 8 am - 6 pm
Between July-August: 9 am - 5 pm
(Central European Time, GMT +1)

NORTH AMERICA

Phone: +1 703 738 1320
support.us@tobii.com
Support hours: 8 am - 8 pm
(US Eastern Standard Time, GMT -6)

JAPAN

Phone: +81 3 5793 3316
support.jp@tobii.com
Support hours: 9 am - 5.30 pm
(Japan Standard Time, GMT +9)

CHINA

Phone: +86 180 1558 5168
support.cn@tobii.com