

Tobii® Technology

Tobii Glasses

Eye Tracker

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Tobii Glasses Eye Tracker

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Product Description for Tobii Glasses Eye Tracker

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Introduction

Groundbreaking new technology and design make it easy to use mobile eye tracking for shopper research, sports research, usability testing, media research, training and evaluation and many other commercial and scientific research areas. Discreet, ultra lightweight design ensures natural user behavior and research validity. Automated data mapping and aggregation, along with system guided procedures, promote supreme process efficiency. Robust eye tracking capabilities can be relied on in uncontrolled situations and a real world environment.

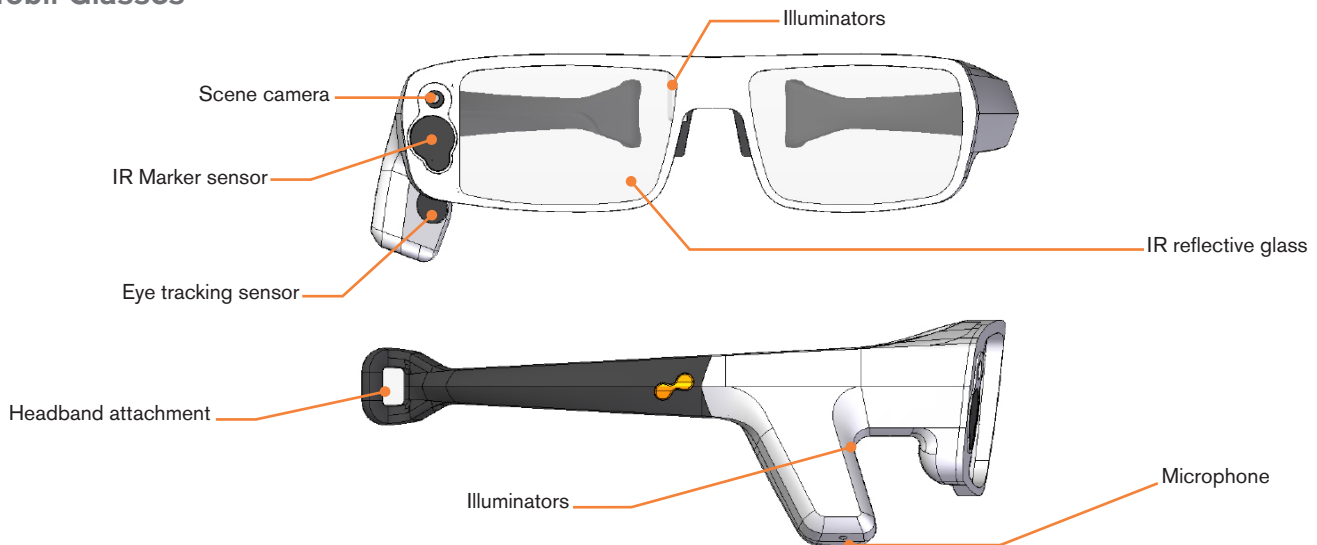
This document describes the technical features and functionality of the Tobii Glasses Eye Tracker:

Basic Operating Principles

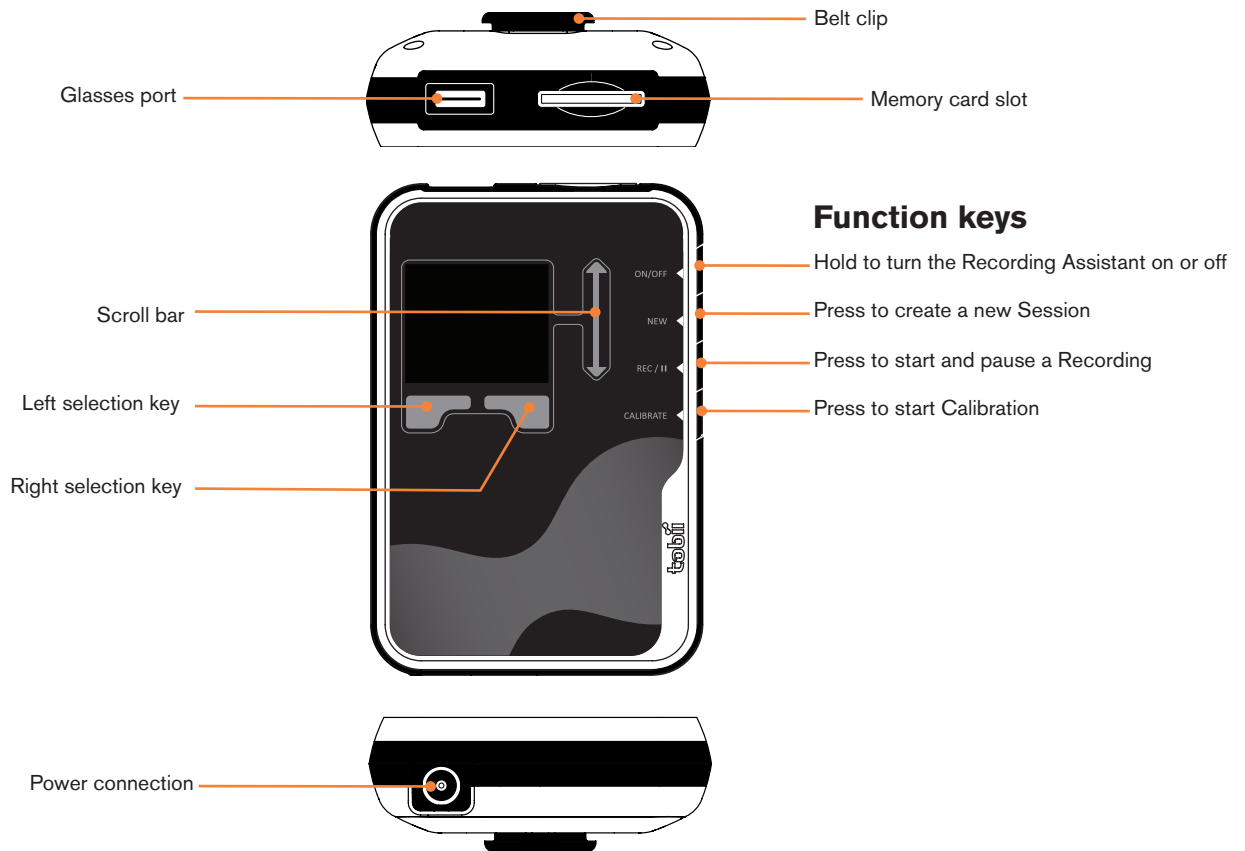
Tobii Glasses	Recording Assistant	IR markers
 <ul style="list-style-type: none"> • Camera captures what the subject sees • Sensor communicates with IR markers 	 <ul style="list-style-type: none"> • Records the eye tracking data, AOA snapshot, video, audio, and the positions of the IR markers on a memory card. 	 <ul style="list-style-type: none"> • Communicate with the Tobii Glasses using invisible infrared light. • When placed in an IR Marker Holder it defines 'AOAs' around the research site.
<ul style="list-style-type: none"> • Eye tracking sensor registers the reflection of the eye • IR illuminators create glints on the subjects's eye • Microphone picks up subject's comments 	<ul style="list-style-type: none"> • Guides you through the calibration of the subjects to secure reliability and remove any subjective judgment. • Shows information about eye tracking quality, battery life, IR Markers preview, etc. 	<ul style="list-style-type: none"> • When used without the holder it functions as a calibration reference point. The calibration can be done by holding the marker against any flat surface.

¹ An Area of Analysis (AOA) is a marked area that can be used to aggregate gaze data for quantitative analysis and to make visualizations such as gaze plots and heat maps using data from multiple participants. An AOA can also be seen as a defined virtual plane, placed over an area that will be analyzed and can contain smaller AOI's (Areas Of Interest) to be used for producing visualizations or statistics. This virtual plane is marked by at least 4 IR Markers placed on or around the area of analysis. AOA's are recognized by Tobii Glasses using IR Markers in combination with the IR Marker sensor in the glasses. By making a photo or "Snapshot" of an AOA, Tobii Studio can overlay the aggregated gaze data from multiple participants on this image.

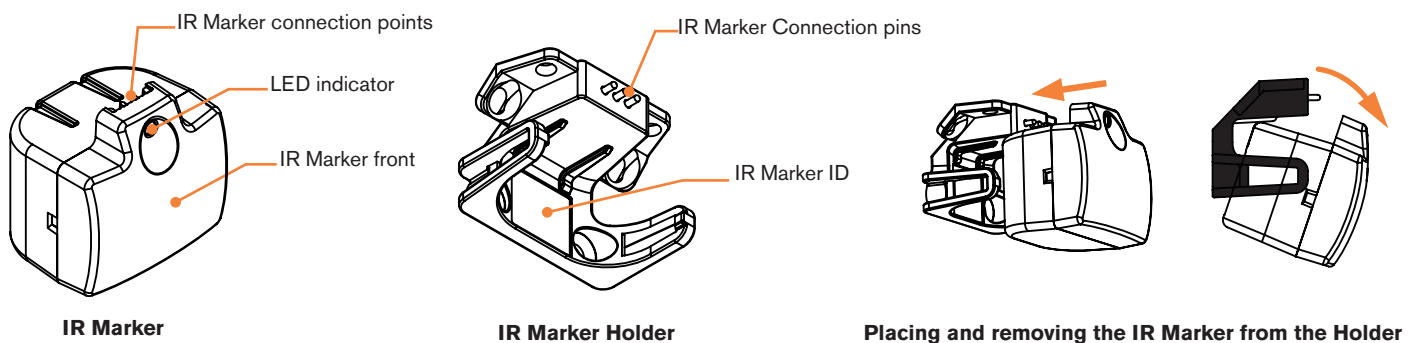
Tobii Glasses



Recording Assistant



Tobii IR Markers and Holders



IR Markers are essentially devices that communicate their location to Tobii Glasses using Infra Red light. When the IR Markers are connected to a IR Marker Holder it sends out a unique IR Marker ID to the glasses. This unique ID is determined by the IR Marker Holder and is used to define the AOA's. Tobii can supply up to 240 different unique ID's for IR Marker Holders.

Technical Specifications

Tobii Glasses Eye Tracker

Eye tracking technique	Pupil Centered Corneal Reflection, Dark pupil
Eye tracking	Monocular (right eye)
Data rate	30 Hz
Firmware	Embedded
Calibration procedure	System guided (9 points)
Post calibration	Yes
Calibration validation	Yes
Sound recording	Yes
Automatic data mapping	Yes, with IR Markers
Parallax compensation tool	Yes, featured in Tobii Studio
Ingress protection	IP class 20

Glasses

Frame material	Fiber-Reinforced Plastic & Rubber
Color	Metallic Silver, Black
Lenses	Hot Mirror glass (IR reflective coating)
Microphone	Integrated
Eye Tracking IR Illuminators	4
Nose pad	Rubber, quickly interchangeable
IR Marker Communication	Integrated sensor
Scene camera video format & resolution	MJPEG2000, 640x480 pixels @30 fps
Scene Camera snapshot format & resolution	JPEG 1.3 Mega Pixels
Scene camera lens aperture and focal length	F2.8 - 4,31mm
Scene camera recording angle/ visual angle	56 degrees horizontal 40 degrees vertical
Cable length	1100 mm 43,5"
Frame dimensions (height x width x depth)	56 x 175,1 x 157,2 mm 2,2 x 6,9 x 6,2"
Weight	75 g 0.17 lbs

Recording Assistant

Display	OLED, 160 x 128 pixels
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Controls	Touch sensitive controls & rubber push keys
Storage media	SD-HC card slot (Tobii approved SD cards only)
Maximum card size	4 GB
Maximum file size per recording	2GB
Maximum recording time	70 minutes
Main battery	Rechargeable Li-Polymer (Varta EZpack XL, 3.7V 260mAh)
Main battery life	up to 110 minutes
Clock battery	CR1220, 3V
Clock battery life	approximately 1 month (without the main battery)
Connectors	Tobii Glasses connection port, Power input (+5V, 2.0 A) connectors
Dimensions (length x width x depth)	123 x 83 x 32,5 mm 4.84 x 3.27 x 1.3"

Weight	200 g 0.44 lbs
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IR Markers

Color	Black
IR Marker range	60-250 cm 23.6-98.4"
Tolerated angles of IR markers	90-150 degrees (depending on viewing distance)
Battery	Integrated with an RGB LED indicator
Battery duration of IR-markers, in active mode & stand-by	240 minutes 14 days
Charging time	0-100%: max. 7 hours
Dimensions (height x width x depth)	27 x 29 x 24 mm 1,1 x 1.1 x 0,9"
Weight	31g 0,07lbs

IR Marker Holders

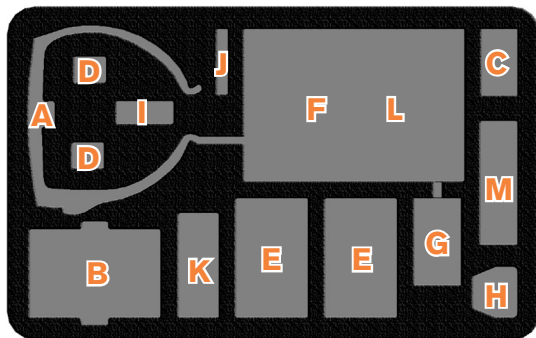
Mounting	screw holes, mounting tape surface
Unique IDs	240
Dimensions (height x width x depth)	22 x 35 x 18 mm 0,9 x 1.1 x 0,7
Weight	4g 0,01lbs

Tobii Glasses Packages - Features and Content

Hardware package		
Items/Features	Glasses Base	Glasses Smart IR*
Tobii Glasses	■	■
Recording Assistant	■	■
AOA-Track automatic data mapping		■

* The package includes 30 IR markers. Additional markers can be bought separately.

Tobii Studio software editions		
Features	Tobii Studio Professional	Tobii Studio Enterprise
Replay with gaze data	■	■
AOA-Track automatic data mapping		■
Eye tracking data visualization		■
Statistics tool		■
Data export functionality	■	■
Manual parallax compensation tool	■	■
Dynamic AOIs	■	■



Tobii Glasses Case

- A. Glasses
- B. Recording Assistant (with 1 battery)
- C. Recording Assistant Batteries (3)
- D. IR Marker (for calibration) (2)
- E. Battery charger(2)
- F. Battery charger cable (2)
- G. AC power supply
- H. Wall socket adapter
- I. Memory cards 4GB (3)
- J. Memory card reader
- K. Nose pads (4)
- L. Headband
- M. Micro fiber cloth

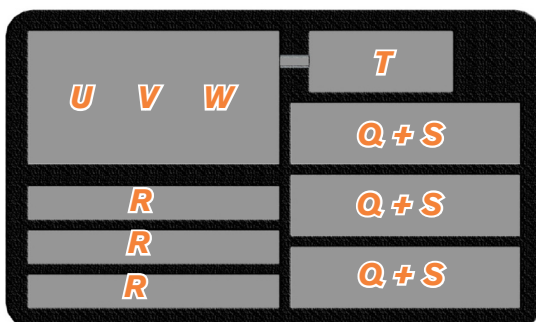
Inside the case pocket:

- Tobii Glasses User Manual
- Tobii Glasses Field Guide
- Smart IR/Total Pack Field Guide

Optional:

IR Marker case (with Smart IR Pack)

- Q. IR Markers (30)
- R. IR Marker Holders (30)
- S. IR Marker charger (3)
- T. AC power supply
- U. AC power cable
- V. AC power splitter
- W. Mounting tape



Tobii Sales:

HEADQUARTERS

Tobii Technology AB
Karlsrovägen 2D
Box 743
S-182 17 Danderyd
Sweden
+46 8 663 69 90 Phone
+46 8 30 14 00 Fax
sales@tobii.com

CENTRAL EUROPE

Tobii Technology GmbH
Niedenau 45
D-60325 Frankfurt am Main
Germany
+49 69 24 75 03 40 Phone
+49 69 24 75 03 429 Fax
sales.de@tobii.com

NORTH AMERICA

Tobii Technology, Inc.
510 N. Washington Street
Suite 200 - Falls Church,
VA 22046 - USA
+1-703-738-1300 Phone
+1-888-898-6244 Phone
+1-703-738-1313 Fax
sales.us@tobii.com

JAPAN

Tobii Technology, Ltd.
3-4-13 Takanawa, Minato-ku
Tokyo 108-0074
Japan
+81-3-5793-3316 Phone
+81-3-5793-3317 Fax
sales.jp@tobii.com

CHINA

Tobii Electronics
Technology Suzhou Co., Ltd
No. 678, Fengting Avenue
Land Industrial Park
Weiting, Suzhou
China
Post code: 215122
+86 13585980539 Phone
sales.cn@tobii.com



www.tobii.com