ERGONEERS
FROM SCIENCE TO INNOVATION

QUICK START GUIDE

DIKABLIS PROFESSIONAL WIRELESS EYE TRACKING

New to Dikablis Professional Wireless use or never set up the system yourselves? Use this guide to learn the basics.

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CONTENT

1 GET TO KNOW THE EQUIPMENT

The binocular Dikablis Professional Eye Tracker is the core part of the system. You can wirelessly transmit data from the Dikablis Eye Tracker to a laptop in real time using the Microsoft surface tablet, a portable battery back and a router to provide WLAN. In order to offer the subject the greatest possible freedom of movement while wearing the eye tracker, all technical equipment is stowed securely in a practical backpack with an inlay.

D-Link router Power supply for router USB cable 0.35m
USB cable 5m Dikablis Connector Box
Charger for battery

Backpack with inlay Power supply tablet Dikablis Professional Glasses
MS Surface 4 Pro Rechargeable battery
Dikablis power cable

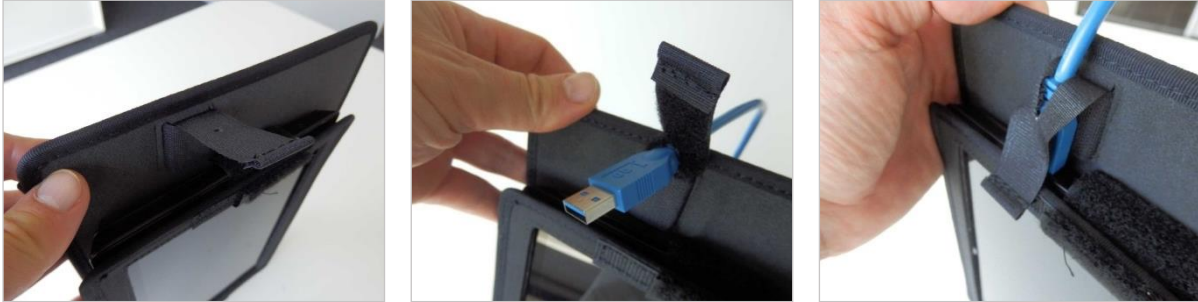# 2 PREPARE THE INLAY OF THE BACKPACK

#STEP 1

Insert the MS Surface 4 in the inlay of the backpack (USB port at open side) and secure the tablet with the strap. NOTE: If you use a MS Surface 2 Pro or 3 Pro, please make sure to only use the fitting inlay for your tablet.

#STEP 2

Pass the blue USB cable through the hole in the Velcro, plug it in the port and secure it with the strap.

#STEP 3

Insert the Connector Box in the small holder on the back of the inlay and secure the Connector Box with the strap. Pass the blue USB cable through the bracket and continue with placing the battery in the bigger holder. Please secure it with the strap.

#STEP 4

Plug the Dikablis power cable in the Connector Box and leave the other side unplugged. The Connector Box will be connected to power after the Software has been started. The last step of preparing the inlay is to connect the blue USB cable to the Connector Box and secure it with the two screws. Finally stow the loose cables (USB and power cable) with the two Velcro straps.

3   INSTALL D-LAB AND D-LAB MINI

The software platform D-Lab is required to capture and analyse eye tracking data with the Dikablis Professional Eye Tracker. The full D-Lab 3 software has to be installed on the laptop. In D-Lab 3 you organize your subjects and the experimental design, manage all recorded sensors and start & stop recordings as wells as perform data analyses. D-Lab Mini 3 is a reduced version of D-Lab 3 and runs on the MS Surface tablet. Its simple interface was created to check if the eye tracker is connected and shows the connection status to the D-Lab 3 laptop. During managing your recording devices, calibrating the Dikablis Eye Tracker and doing a measurement D-Lab Mini 3 transmits a live view of the gaze video, scene and eye videos to the D-Lab 3 laptop in real time.

Download D-Lab 3 and D-Lab Mini 3.
http://www.ergoneers.com/faq/index.php?action=news&newsid=3&newslang=en

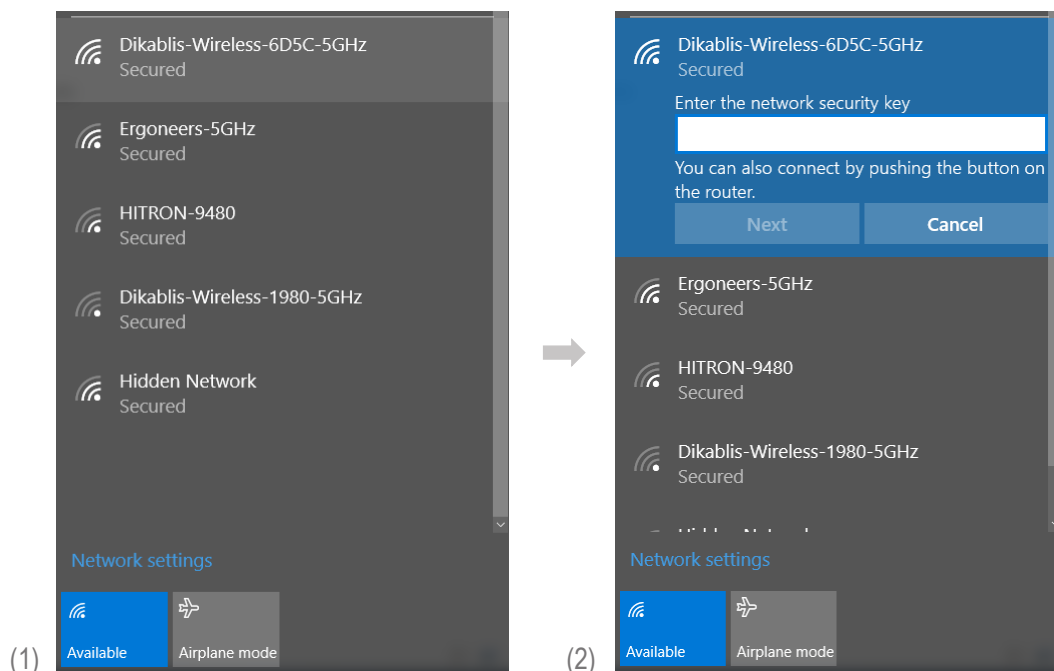NOTE: Install D-Lab 3 on the laptop and D-Lab Mini 3 on the MS Surface tablet!

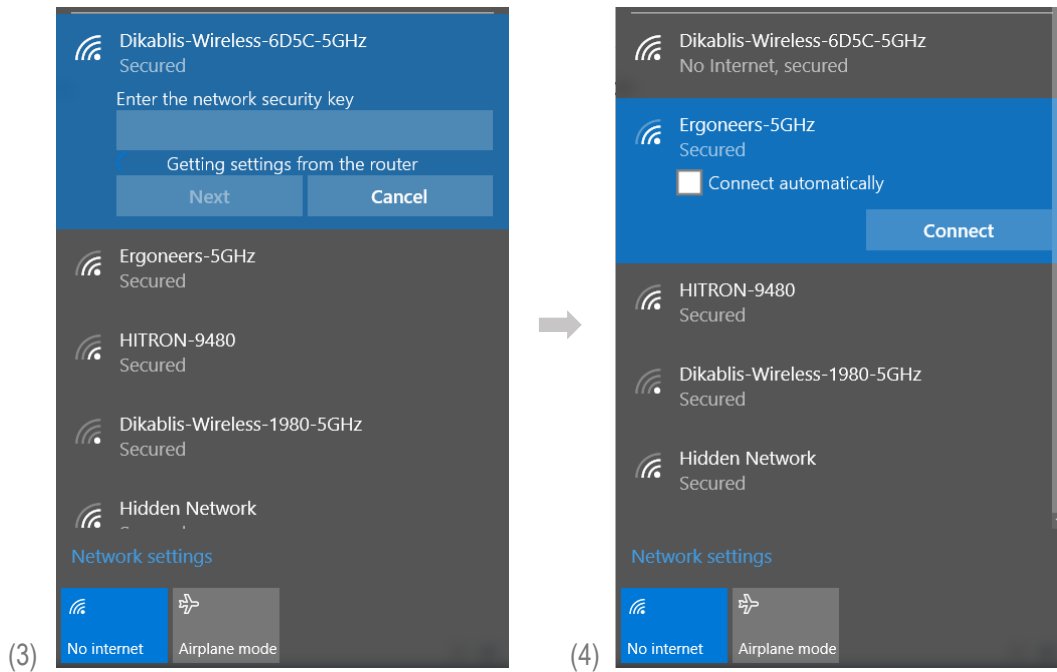## 4   CONNECT TABLET AND LAPTOP TO WI-FI

Turn on the Router. Plug in the power supply at the back of the router and connect it to a socket. Press the power button and wait until the LED ⏻ on the front turns green.

Connect MS Surface to Dikablis-Wireless-xxxx-5GHz Wi-Fi. Start the Windows 10 network configuration in the Windows menu bar 📶, then choose the Dikablis-Wireless-xxxx-5GHz network (1) and enter the password (2) or push the WPS button to send the password automatically (3). The password is written on the label at the bottom of the router.

Disable "Connect automatically" for other networks. To make sure, that all other available networks will not connect automatically to any of the devices, disable the "connect automatically" option in the Windows network configurations (4).
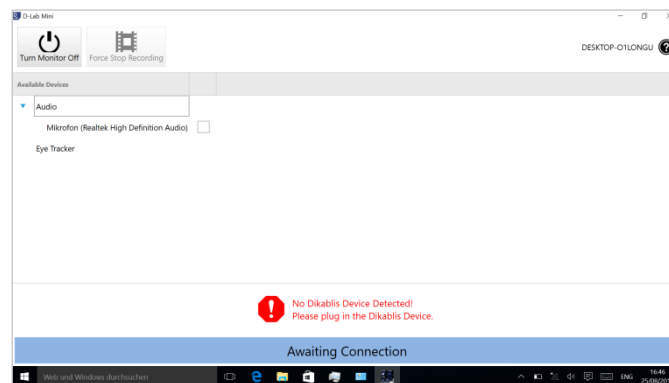
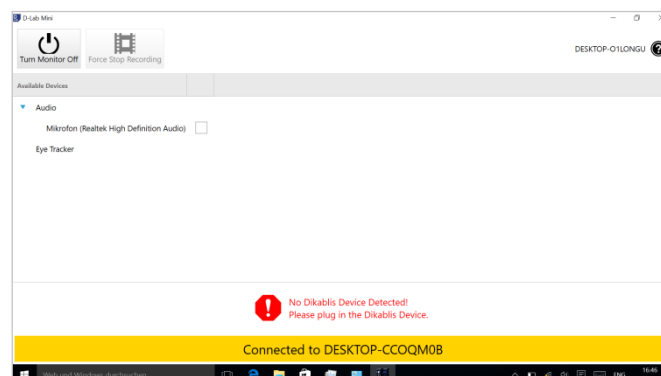**Connect the laptop to Dikablis-Wireless-xxxx-5GHz Wi-Fi.** Repeat the last two steps on the laptop.

(1)   (2)

(3)   →   (4)

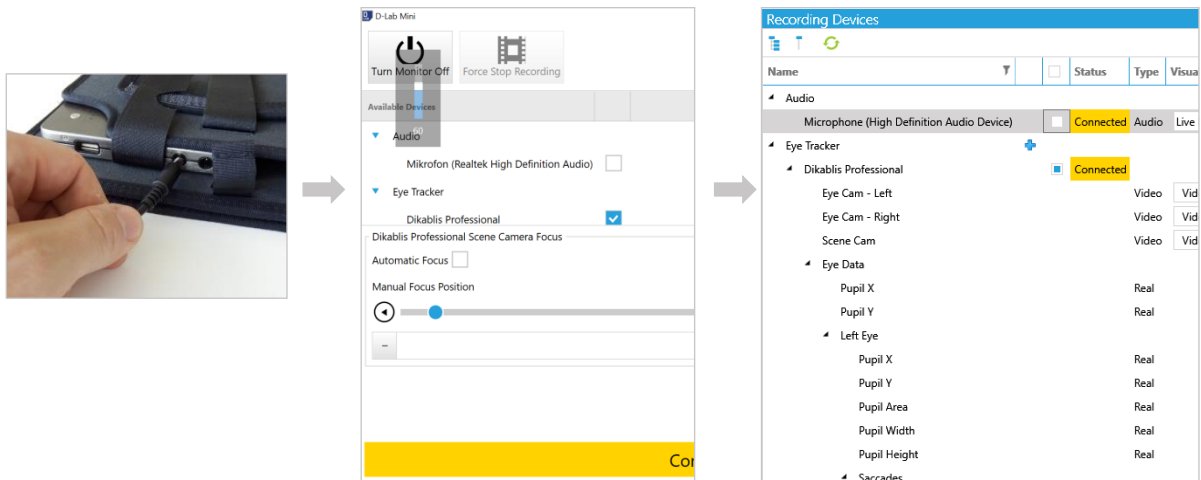## 5   START D-LAB MINI 3 AND D-LAB 3

Start D-Lab Mini 3 on the MS Surface tablet. The blue bar on the bottom tells Awaiting Connection as long as D-Lab 3 has not been started.

Start D-Lab 3 on the laptop. The software requires a Licence Dongle to run. The minimum licence required for Dikablis Wireless use is Eye Tracking Head Mounded Essential. Connect a Licence Dongle to the laptop and press 🗗. Create a project or open an existing one. D-Lab 3 connects automatically to D-Lab Mini 3 and the status bar in D-Lab Mini 3 turns yellow.

6

Connect Dikablis to battery. Plug in the loose end of the Dikablis Power cable to the battery pack and press the button on the battery. Now the Eye Tracker is shown in D-Lab Mini 3 and then also in D-Lab 3.

NOTE: If you connect the Eye tracker to the tablet please always start D-Lab Mini 3 first, before you plug-in the USB cable and finally connect the Dikablis Eye Tracker to power.

NOTE: If the D-Lab 3 and D-Lab Mini 3 do not connect automatically, deactivate the firewall of the MS Surface and the laptop (Windows Firewall > Turn Windows Firewall on or off)

6 SET UP THE DIKABLIS EYE TRACKER

Fill the backpack. Insert the inlay with the Connector Box and the battery to the backpack, so the USB port is on the top. Close the zip and secure the cable of the Dikablis Eye Tracker with the strap.

Put on the backpack. Put the padded strap over the left shoulder of the subject and secure it with the buckle which comes from the right bottom. Finally close the belly strap.

Put on the Dikablis Eye Tracker. The Dikablis glasses can be worn like regular eye glasses and several parts are adjustable. Adjust the nosepiece, so that you get the most comfortable fit and secure the elastic strap at the back of the head. NOTE: Dikablis Eye Tracking Glasses can easily be worn together with all types of glasses, as long as there is no infrared light filter in it. Put the Dikablis glasses on top of the other ones.

Adjustable Field Camera with magnetic lens

Adjustable Nosepiece

Adjustable Eye Cameras
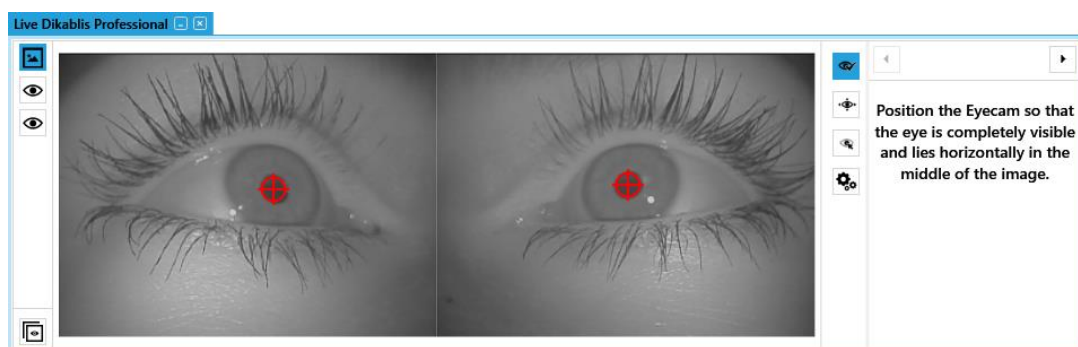
7   GET STARTED WITH DIKABLIS EYE TRACKING IN D-LAB 3

The calibration of the Eye Tracker as well as the control during recording can be controlled from the D-Lab laptop. The live views of the gaze video, scene and eye videos are transmitted from the tablet in real time to the D-Lab pc using WLAN. After the recording the complete eye tracking data can be downloaded from the tablet to the D-Lab laptop.

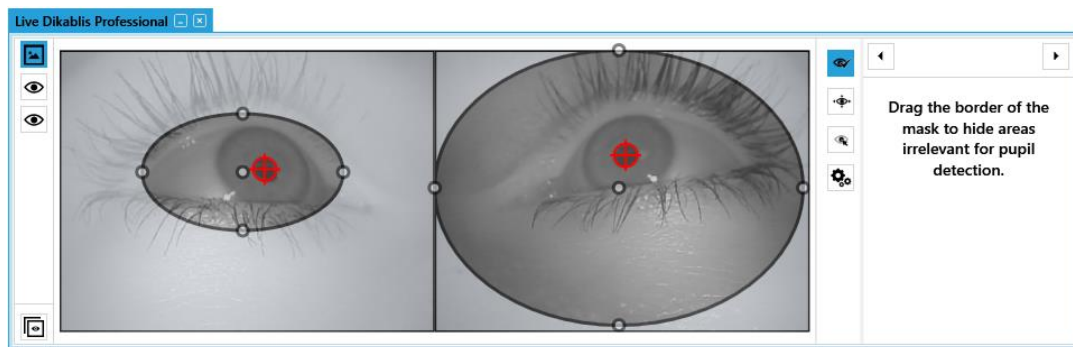### #STEP 1 – CALBRATE THE DIKABLIS EYE TRACKER

Open a visualisation. Go to the Screen Layout tab, choose the Eye Tracker visualisation 👁 and drag & drop Dikablis Professional from the Recording Devices window to the empty Eye Tracker visualisation.

Open the calibration wizard for Dikablis Professional. Click to the icon 👁 on the top right in the Eye Tracker visualisation and follow the instructions.

Adjust the Eye Cameras. The eyes have to be centred and horizontally aligned. NOTE: Be careful with the camera arms and hold the arm while adjusting the camera.

Mask dark eyelashes. If the red crosshair jumps towards dark eyelashes, grab one of the dots and exclude the eyelashes of the area in which the pupil can be detected.

Adjust the Field Cameras view. Decide what should be in the view of the Field Camera and adjust it, to allow the person with the eye tracker a natural head posture.

Perform the four-point calibration. Choose one point in each quarter and ask the subject to look at the chosen point in the highlighted area without moving its head. Click with the mouse on the corresponding point in the Scene Video. Repeat this process with the other quarters. After the fourth point, verify the calibration and end the wizard with Finish.

NOTE: The subject should only move the eyes but not the head during the complete four-point calibration. Any head movements will result in a large error!
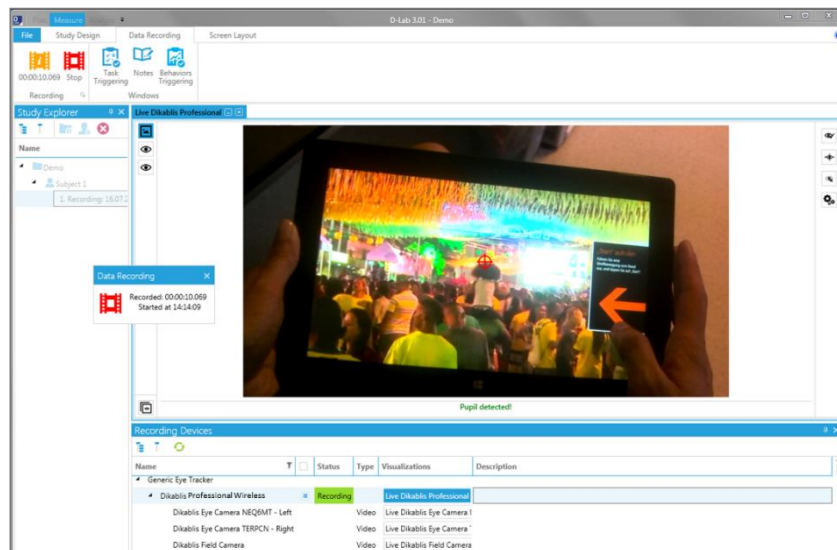

#STEP 2 – DO YOUR FIRST MEASUREMENT

Go on to the Measure Mode. On the bottom left you can move on to Measure Mode. Choose your subject and ensure that Dikablis Professional Wireless is selected for recording (check box selected).
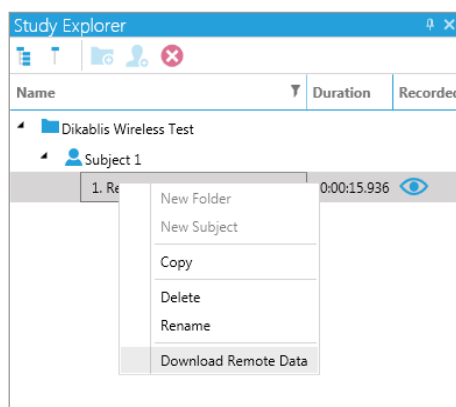
Arrange your Measure Layout. D-Lab 3 provides a wide range of visualizing data. In each Mode (Plan, Measure, Analyse) you can arrange you windows and visualizations as needed and it will be saved for that mode.

Start a recording. Push the Record button to start a recording and follow the live view on the screen sent in real-time from the MS Surface via Wi-Fi. NOTE: The entire recorded data will be stored on the MS Surface, thus the subject can move out of Wi-Fi range as long as it comes back to stop the recording.

End a Recording. Press the red icon either in the popup window or on the top left in the menu bar.

Download Remote Data. Go to the Study Explorer and right-click on the orange Eye Tracker icon, select Download Remote Data and wait until the copy is finished.

8   HELP AND SUPPORT

You can find answers to your questions, as well as instructions and troubleshooting information, in Ergoneers FAQ (http://www.ergoneers.com/faq).
In case of other questions or hardware problems contact support@ergoneers.com.