

IRISBOND DUO

EYETRACKING
SYSTEM

USER
MANUAL



IRISBOND

User Manual IRISBOND DU[®]

This User Guide is subject to change.

To get the latest version, go to www.irisbond.com/en

Version 1.0

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Welcome to Irisbond

Congratulations on purchasing the Irisbond system which will allow you to use a computer simply by moving your eyes!

The Irisbond system is based on the latest innovations in artificial vision technology, and more specifically, on *Eye Tracking* technology, which allows the user to control a computer mouse by moving their eyes. Those who benefit most from the system are people with severe motor impairment who cannot use conventional mouse movement systems. Individuals with Amyotrophic Lateral Sclerosis (ALS) or Cerebral Palsy using Irisbond can access a variety of apps installed on the computer. Irisbond gives the user a window to the world, allowing them to communicate, share experiences and knowledge, watch movies, read, listen to audiobooks, play...there really is no limit!

In addition, by using Augmentative and Alternative Communication (AAC) tools such as a virtual keyboard, voice synthesizers and environmental control systems, the user can control the remote control for the TV, or any other infrared device. For perhaps the first time ever, they will be able to control devices at home around them.

The Irisbond eyetracker is safe to use, complies with relevant European Guidelines and Directives and has been tested by a certified laboratory in accordance with industry standards.

Irisbond Duo Eyetracker

The system is made up of one eyetracking device connected to computer via a cable (included with the device) through a USB port (either USB 2.0 or USB 3.0). The eyetracker emits infrared light beams which create reflections on the user's corneas. A camera then registers these reflections and through a series of complex computational algorithms is able to identify the user's pupils. The information is then processed by the computer via the Irisbond Primma software (once installed on the computer). This allows the user's eye movements to be translated into onscreen positioning coordinates for the mouse.

System Components

The Irisbond Duo system comes with the following components:

- 1 Irisbond eyetracker.
- 1 USB extension cable.
- 4 mounting attachments.
- 1 memory stick which contains the Primma software, User Manual, Quick Start Guide and an activation file.



Description of Components

Irisbond Duo Eyetracker



On the back of the eyetracker there are two metallic indentations which the eyetracker support fits into.

Support



The eyetracker support holds the device in place.

Cable



The cable enables a connection between the computer and the eyetracker.

Mounts



The mounts allow you to use the Irisbond system on various surfaces.

USB pen



The USB pen comes pre-loaded with software and user manuals.

Assembly Options

The Irisbond Duo system is designed to be fully adaptable for use with laptops, Desktop PCs and tablets:

1. Laptop



Attached to a flat surface on the laptop.



Placed in front of the laptop.

2. Desktop Computer



Attached to the lower area of the monitor.



Placed in front of the monitor.

3. Tablet



Attached to a tablet using a special adaptor.

How to Position Irisbond Duo When Using a Laptop

When using a laptop, the Irisbond eyetracker can be positioned in three ways:

1. Attached to the laptop in the space between the screen and the keyboard
2. Attached to the bottom section of the laptop screen
3. Placed on a table in front of the laptop

How you choose to position the eyetracker will depend on the model of the laptop you are using and the position of the user (seated in a chair, reclined in a profiling bed, lying down, using an inclined table etc.)

Option A. Attached to the laptop in the space between the screen and the keyboard



Instructions:

1. Should you wish to attach the eyetracker to the laptop in the space between the screen and the keyboard, you must first identify the adhesive mount specifically designed for use with a laptop. You will be able to recognize it as it has a laptop design on it.



Laptop symbol



Adhesive mount for laptops

2. Remove the protective paper from the adhesive strip and place the mount (adhesive strip side down) on a clean and flat area between the screen and the keyboard with the arrow pointing towards the screen. Allow at least 8 hours before attaching the eyetracker support to the mount.
3. Connect the USB cable to the Irisbond eyetracker.



4. Attach the support to the Irisbond eyetracker by bringing together the metal contacts on the back of the Irisbond device and the magnets on the support. When bringing these into contact, be sure that both tabs are facing downwards.



5. Slot the support (now holding the Irisbond eyetracker) in the mount attached to the laptop.



WARNING The strip on the mount is made of a strong adhesive material. We recommend carefully considering where to place the mount before attaching to the computer as the adhesive is semi-permanent.

Option B. Attached to the bottom section of the laptop screen



Instructions:

1. Should you wish to attach the eyetracker to the bottom section of the laptop screen you must first identify the adhesive mount specifically designed for use with a laptop. You will be able to recognize it as it has a laptop design on it.



Laptop symbol



Adhesive mount for laptops

2. Remove the protective paper from the adhesive strip and place the mount (adhesive strip side down) on the bottom area of the screen with the arrow pointing downwards. Allow at least 8 hours before attaching the eyetracker support to the mount.
3. Attach the support to the Irisbond eyetracker by bringing together the metal contacts on the back of the Irisbond device and the magnets on the support. When bringing these into contact, be sure that the tabs are facing upwards.



4. Slot the support (now holding the Irisbond eyetracker) in the mount attached to the laptop.



WARNING The strip on the mount is made of a strong adhesive material. We recommend carefully considering where to place the mount before attaching to the computer as the adhesive is semi-permanent.

Option C. Placed on a table in front of the laptop.



Instructions:

Another way of positioning the eyetracker is to place it in front of the screen on the rest designed for using the device on tables. The tabletop rest creates a larger surface area for the eyetracker support and allows the user to securely position the eyetracker on a flat surface.

1. Identify the tabletop rest.



2. Slot the support (holding the Irisbond eyetracker) into the tabletop rest. Finally, place the eyetracker in front of the laptop.



How to Attach Irisbond Duo to a Desktop Computer Screen

When using a desktop PC, the Irisbond eyetracker can be positioned in two ways:

1. Attached to the bottom section of the monitor
2. Placed on the table in front of the monitor

Option B. Attached to the bottom section of the monitor



Instructions:

1. To attach the eyetracker to the bottom area of the monitor you must first identify the adhesive mount specifically designed for use with a monitor. You will be able to recognize it as it has a monitor design on it.



2. Remove the protective paper from the adhesive strip and place the mount (adhesive strip side down) on the bottom area of the monitor with the arrow pointing downwards. Allow at least 8 hours before attaching the eyetracker support to the mount.
3. Attach the support to the Irisbond eyetracker by bringing together the metal contacts on the back of the Irisbond device and the magnets on the support. When bringing these into contact, be sure that the tabs are facing upwards.



4. Slot the support (now holding the Irisbond eyetracker) in the mount attached to the monitor.



WARNING The strip on the mount is made of a strong adhesive material. We recommend carefully considering where to place the mount before attaching to the computer as the adhesive is semi-permanent.

Option B. On a table in front of the monitor



Instructions:

Another way of positioning the eyetracker is to place it in front of the screen on the rest designed for using the device on tables. The tabletop rest creates a larger surface area for the eyetracker support and allows the user to securely position the eyetracker on a flat surface.

1. Slot the support (holding the Irisbond eyetracker) into the tabletop rest. Next, place the eyetracker in front of the monitor.



How to Attach Irisbond Duo to a Tablet

To attach the Irisbond Duo Eyetracker to a tablet, a special adaptor is required. Irisbond is compatible with tablets with a 10 to 15" screen and have a Windows operating system.



Instructions:

1. Remove the screws in the center of both magnetic contacts on the back of the Irisbond Duo Eyetracker.



2. Take the special adaptor for tablets and the two screws; place the adaptor on the back of the Irisbond Duo device as illustrated in the images below. Next, fix the eyetracker to the adaptor using the two screws.



Special adaptor for tablets



Fixing the adaptor to the eyetracker

3. Attach the adaptor fixed to the eyetracker to the tablet cradle by using the four screws (or as otherwise specified according to the cradle model). Complete the below steps:



Unscrew all four screws to release the fastening device at the back of the cradle.



Line up the screws on the fastening device to the adaptor. Adjust the height of the cradle by sliding it up or down. Tighten the screws.

4. Insert the tablet in the cradle.



5. Finally, take the articulated arm supporting the tablet and clamp it to a wheelchair or surface. The system of joints which allows the arm to support the tablet offers the user endless accessibility options.



Installing the Primma Software

Before you can control your computer using your eyes you need to install the software on the memory stick included with the eyetracker. This must be done before connecting the Irisbond eyetracker to your computer.

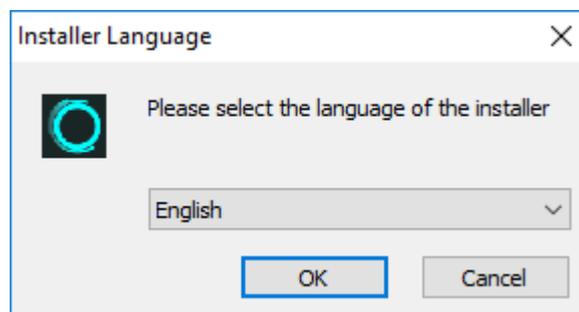
The software is compatible with computers and portable devices which have a Windows operating system (Vista, 7, 8 and 10).

1. Insert the memory stick in one of the USB ports on your computer. Double click on the file *Primma Setup 3.5.8_Duo.exe*. For installation to be successful, you need to have administrator rights. If your Windows user account does not have the

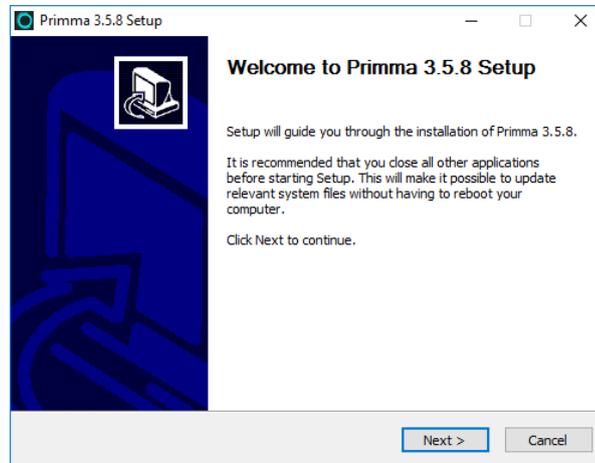


necessary rights to install programs, a dialogue box will appear upon beginning installation prompting you to enter the administrator password for your computer/device.

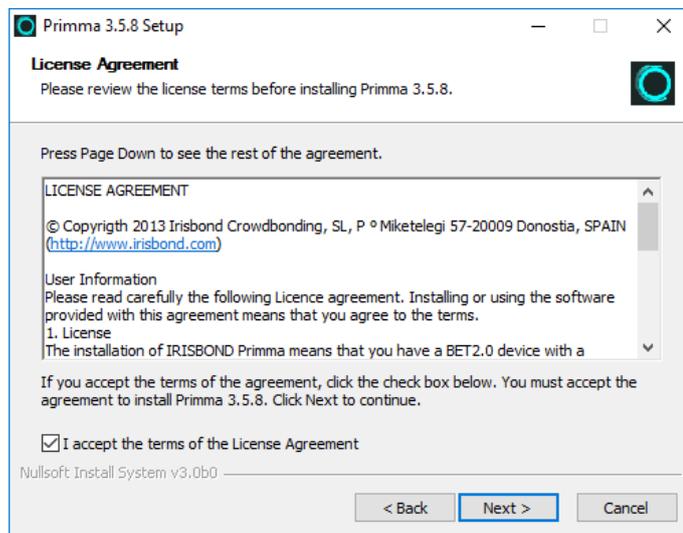
2. Select the language you require for installation and click OK.



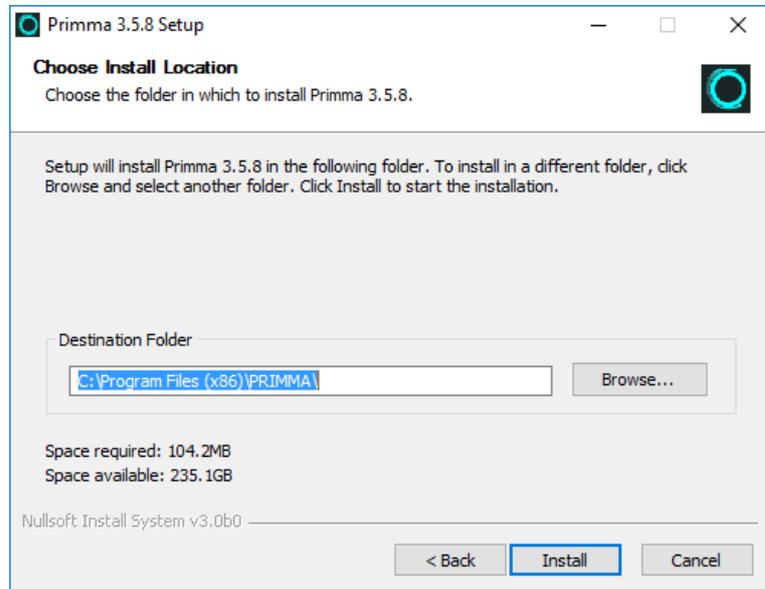
3. A Wizard will open to guide you through the installation. Read the information on screen and click Next.



4. You must accept the terms of the License Agreement to continue installation. Click the checkbox to accept the terms of the agreement and click Next.



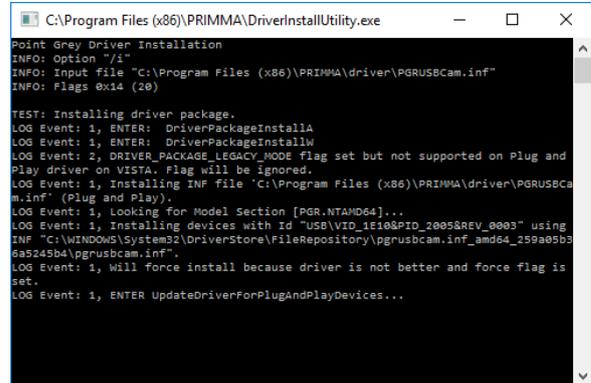
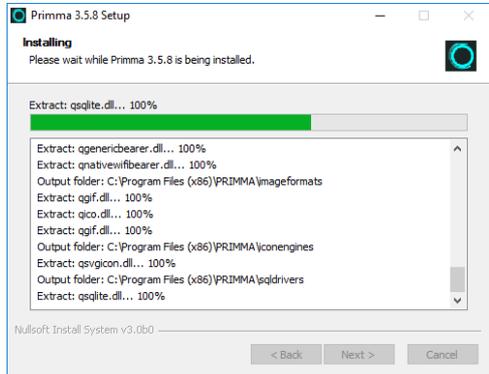
5. Select the destination folder where you wish to install Primma 3.5.8. By default you will be offered C:\Program Files (x86)\PRIMMA\. Read the onscreen instructions and then click Install.



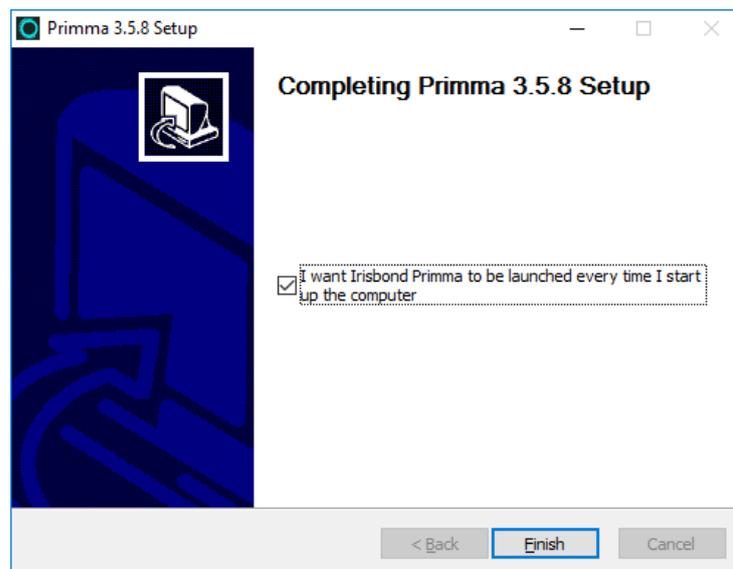
6. **NOTE:** If your operating system is Windows 7 or 8, it is possible that you will receive the message below. Select or click on Always trust software from “Point Grey Research Inc.” and then click Install.



7. The system will then begin installation. Progress will be displayed in a series of screens.

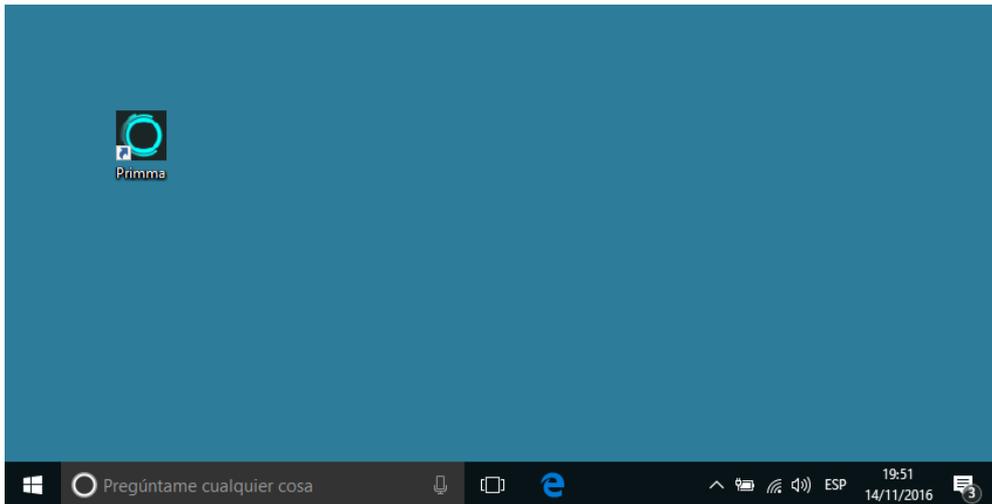


- To complete installation you will be asked if you wish to launch Irisbond every time you start the computer. Make your selection by ticking or un-ticking the box and then click Finish.



i Select "Launch Irisbond Primma on startup" if the computer is used exclusively by the Irisbond user. By choosing this option, the user will then be able to control the computer from the moment it is turned on, and will be able to configure and calibrate Primma without the assistance of another person.

9. Once you have completed installation, a shortcut to the Primma application will appear on the desktop.



TIP To grant the application administrator rights, right-click on the Primma icon -> go to Properties -> Compatibility tab -> Select "Run this program as an administrator" -> Apply and Accept.

How to Activate the License

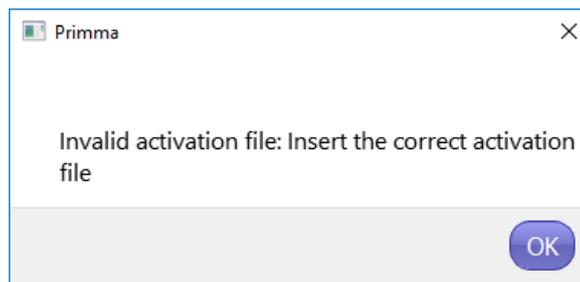
You will be asked to activate the license the first time you run the Primma software.

Instructions:

1. Connect the Irisbond system via a USB port on your computer. The system will function perfectly with both USB 2 and USB 3 ports.

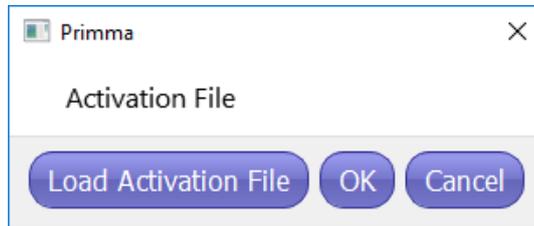


2. Double click on the Primma icon. A new window will open stating that the license is invalid. This is because we have not yet activated the license. Click OK to continue.

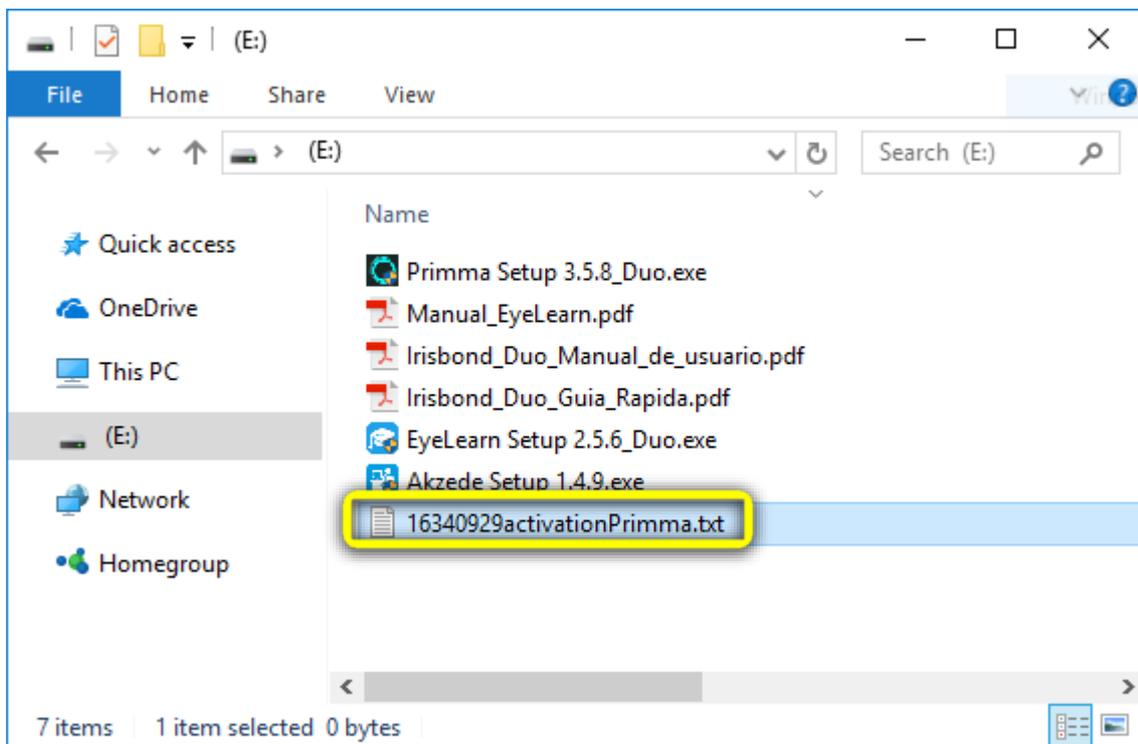


WARNING Do not connect the Irisbond system through the front-facing USB ports on desktop computers, as they may have limited power capability.

2. The next window will prompt you to load the activation file. Click Load Activation File.



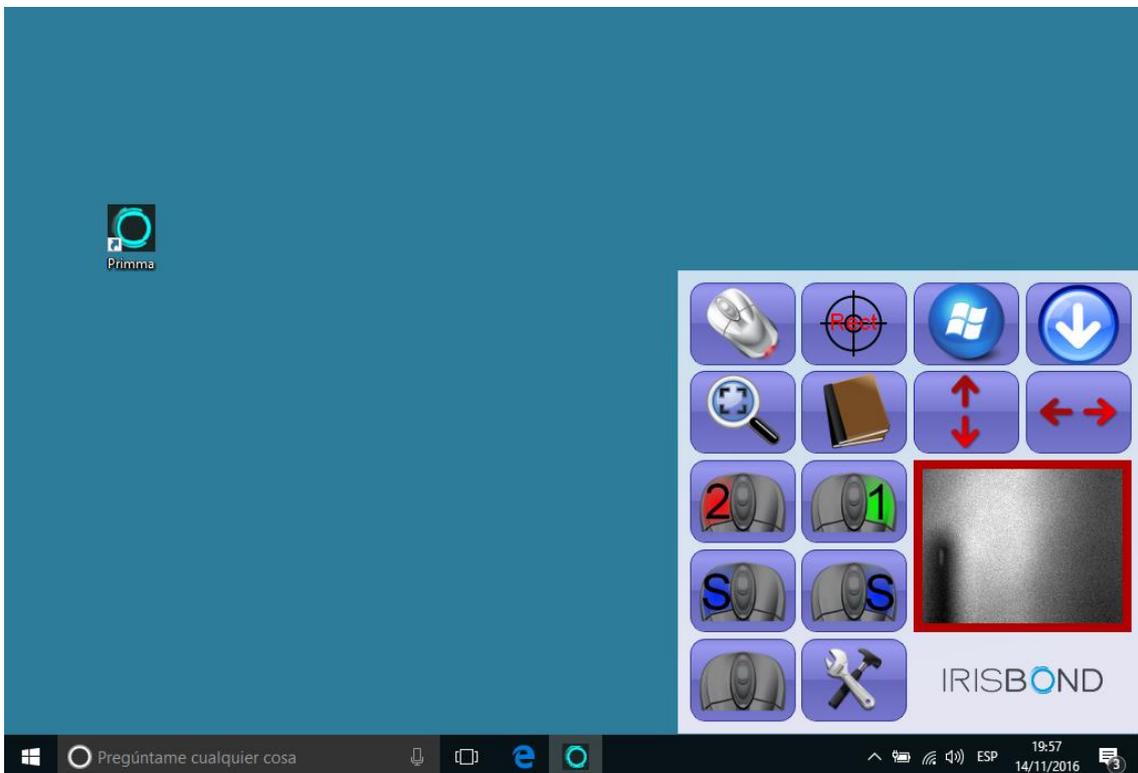
Windows Explorer will open. Select the activation file which comes pre-loaded on the memory stick.



In this case the file is named 16340929activationPrimma.txt. Please note that the numbers at the beginning of the file (16340929) must match the serial number on the Irisbond system as you can see in the picture below:



3. Select the activation file and click OK. The user interface which allows you to control the Irisbond system will appear in the lower right-hand corner of the desktop.



Start Up

Starting up the Irisbond system consists of three steps:

- Create a user.
- Choose the click mode.
- Configure the system.

Manage Users

Primma has a user manager system so that everyone who wishes to use Irisbond Duo can do so using the same computer.

During installation, the system automatically creates a default user profile with the standard settings. The default user profile can be modified, but it cannot be deleted or renamed.

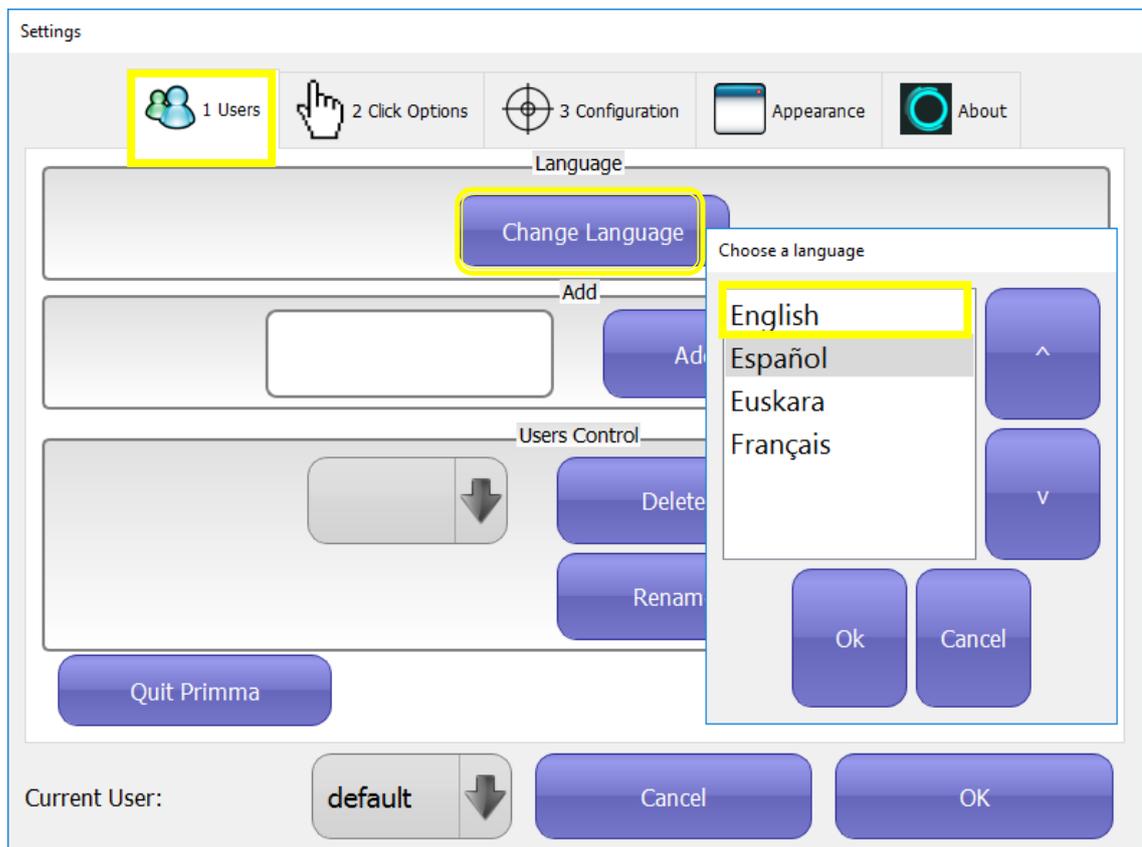
Select Language

Instructions:

1. Open the Primma setting by clicking on the Settings icon.



- In tab 1. *Users* click on Change Language and a new window will open with a drop-down list of languages. Select the language of your choice and confirm by clicking OK. All text will then be displayed in your chosen language.



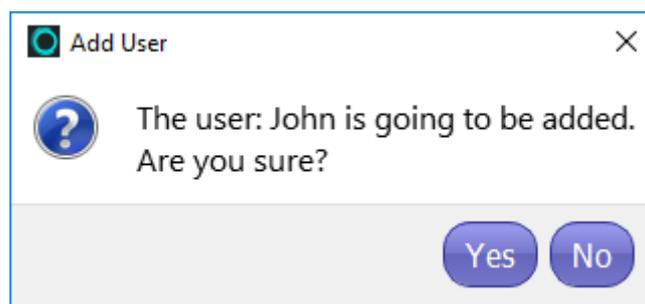
Create a User Profile

Instructions:

- In tab 1. *Users*, type the name of the profile you wish to create (for example, John) in the empty field in the Add User section. Click Add New User to create a new user profile.



2. Confirm by clicking Yes.

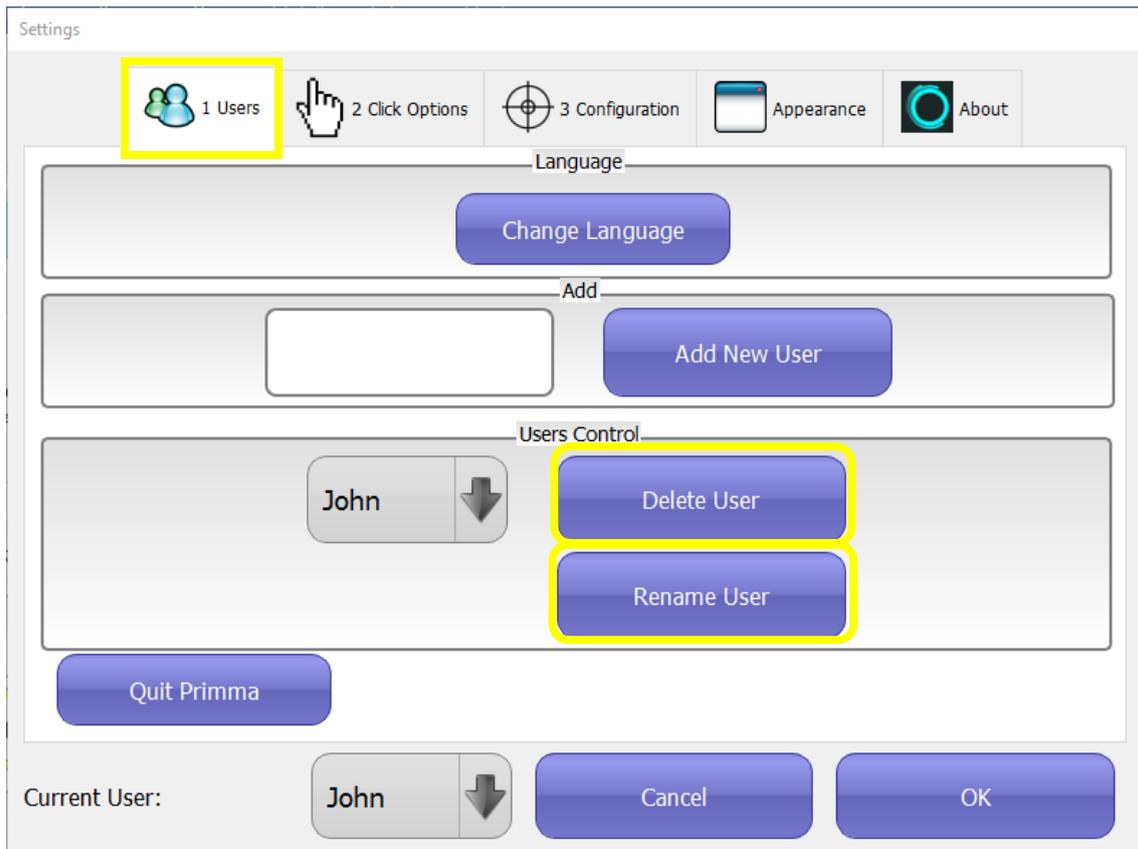


In the Manage Users section you will find a drop-down list of all the user profiles that have been created. You can see all profiles in the list by clicking on 

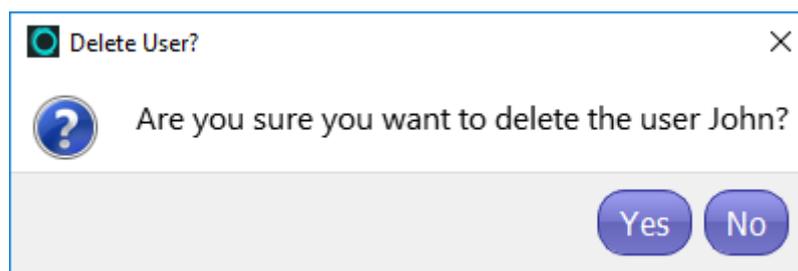
In the Current User field, the profile currently in use will be displayed. To select another profile, choose from the drop-down list by clicking on 

Managing User Profiles

Primma has a simple and practical system to maintain user profiles: simply click on the “Delete User” and “Rename User” buttons.

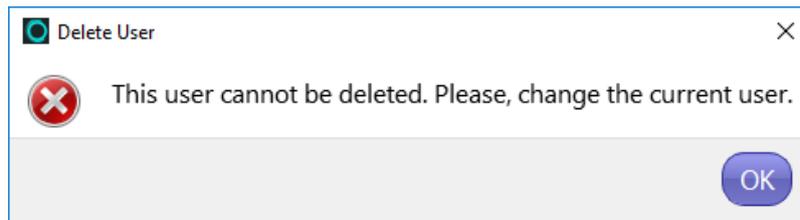


To delete a user profile you must first select the name of the profile you wish to delete. The window below will appear in the Manage Users section asking you to confirm the action. Click *Yes* to confirm and *No* to undo.

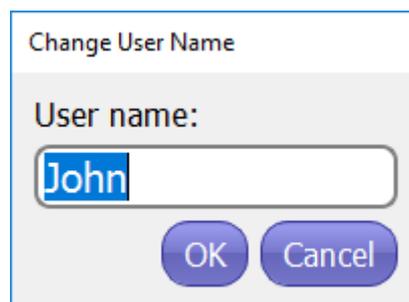


**WARNING**

If the profile you wish to delete is that of the current user (which you can see in the Current User field), you will not be able to delete the profile. The following warning message will appear:

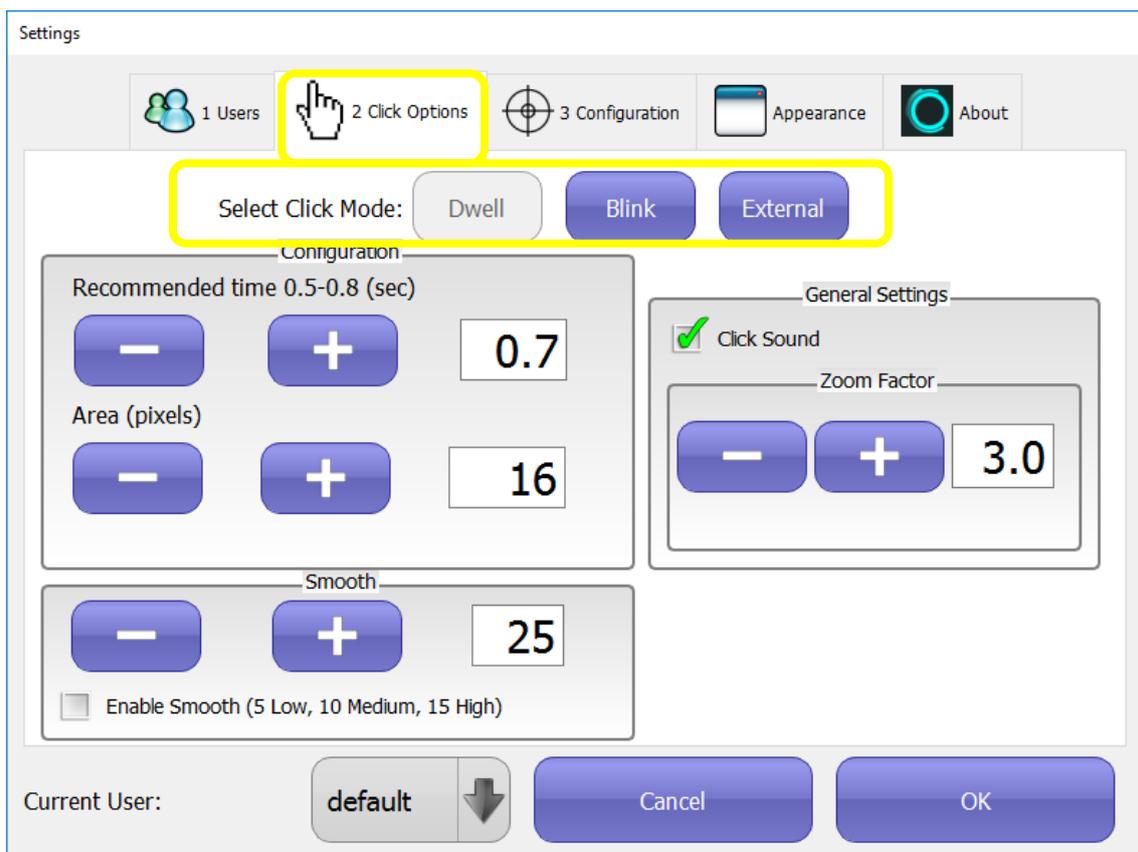


To rename a user profile you must first select the name of the profile you wish to rename. The below window will appear in the Manage Users section allowing you to change the profile name. Click on the name and click *OK* to confirm or click *Cancel* to go back.



Click Options

Primma allows you to control the mouse cursor with your eyes. It also lets you decide how you wish to click the mouse. You have the following click options: Dwell, Blink and External.



You can change the click options at any time.

To do this, click on tab 2. *Click Options*.

Dwelling

You can click by “dwelling”, i.e. by keeping your gaze steady on a fixed point over a set period of time. The parameters of this click option can be changed at any time.

Instructions:

1. Go to *Select Click Mode*, and click *Dwell*.
2. In the Configuration section you will see the following parameters: Recommended time 0.5 - 0.8 (sec) and Area (pixels).



Recommended time: define the minimum time the user must hold their gaze on the screen. We recommend durations of between 0.5 and 0.8 seconds. The timeframe can vary in different cases. When familiarizing yourself with the system, we recommend that you begin with a value of between 0.8 and 1 second.

Area (pixels): define the area or size of the space where the user must hold their gaze.

The larger the area, the greater freedom of movement for the cursor. For your reference, the following images have an area of 16, 32 and 64 pixels:

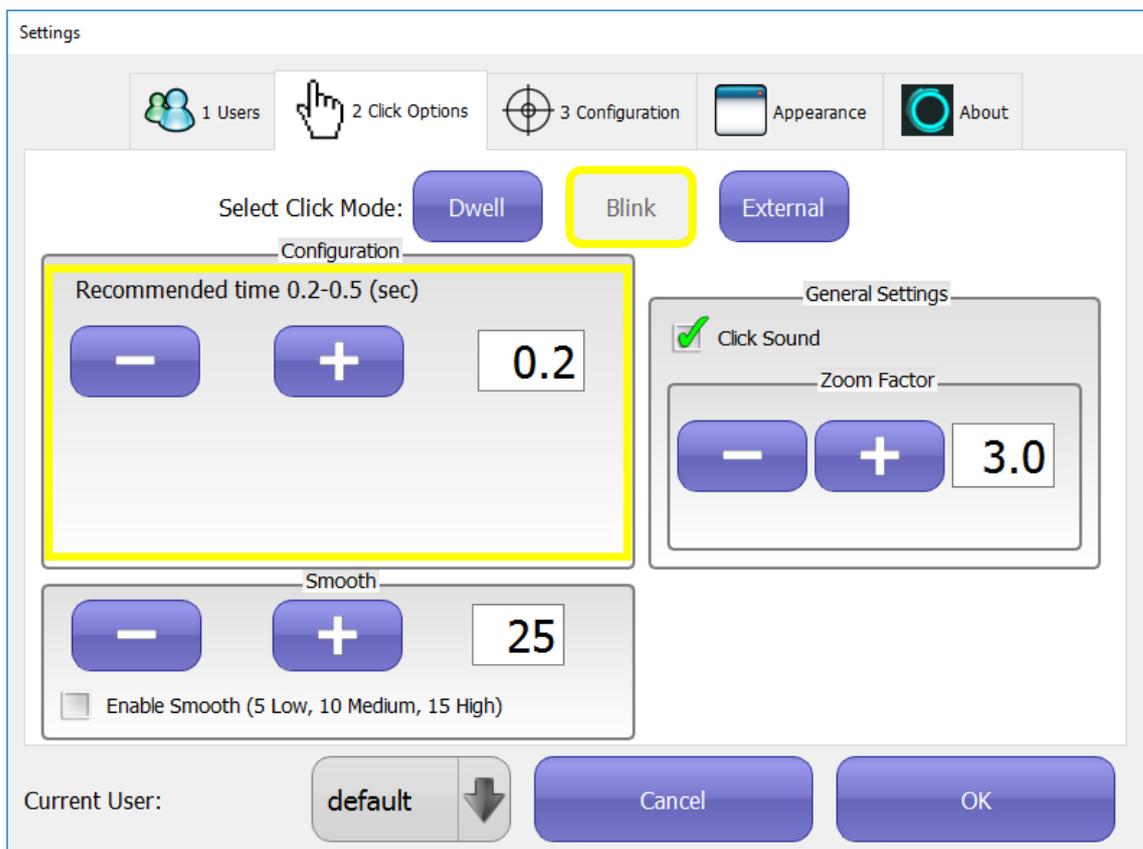


Blinking

Clicking by “blinking” consists of closing one or both eyes for a little longer than a normal blink, for a duration of time defined in the system.

Instructions:

1. Go to *Select Click Mode*, and click *Blink*.
2. In the Configuration section you will see the following parameters: Recommended time 0.2 - 0.5 (sec).



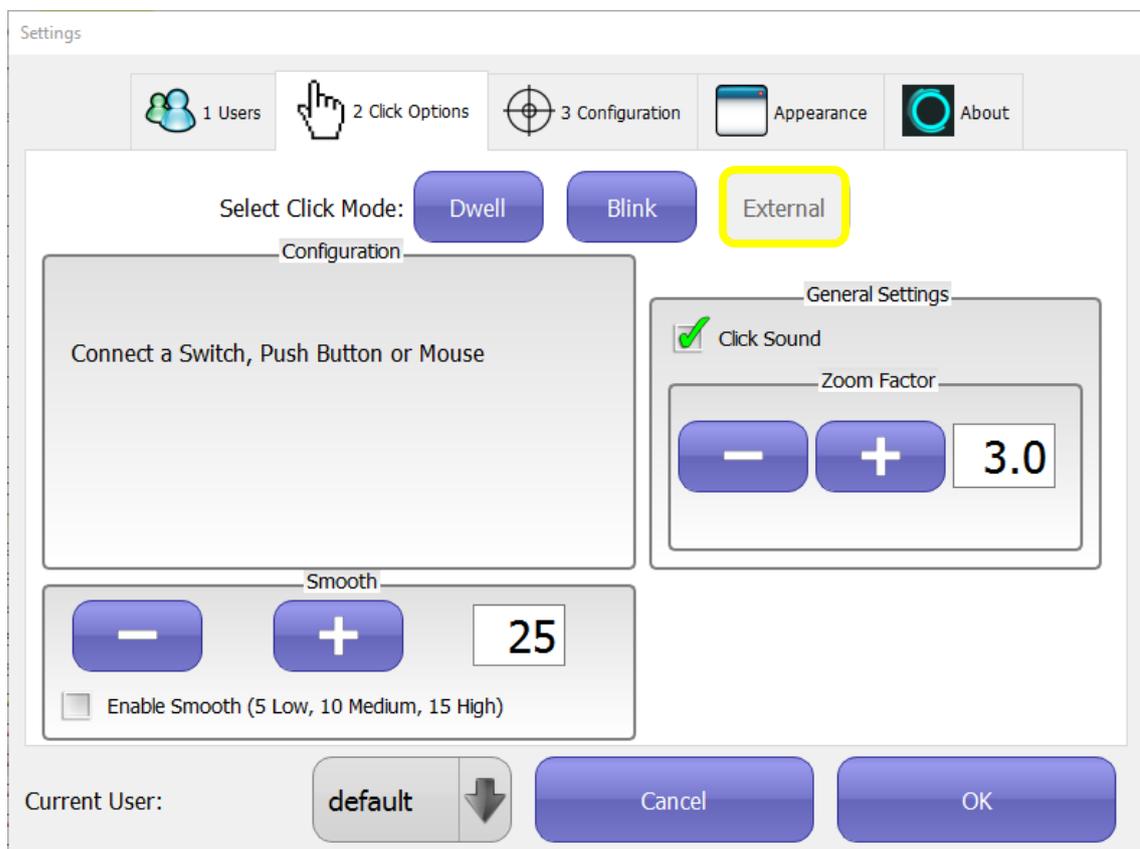
Recommended time: define the minimum time the user must close one or both eyes for. We recommend durations of between 0.2 and 0.5 seconds (this can vary in some cases). There are two ways to enter these values: using the + (more) which increases the time and – (less) buttons which decreases the time; alternatively, you can enter or change the values directly in this field.

External

External clicking is possible via the use of a mechanical or electronic piece of equipment connected to the computer through one of its ports.

Instructions:

1. In *Select Click Mode*, click *External*.

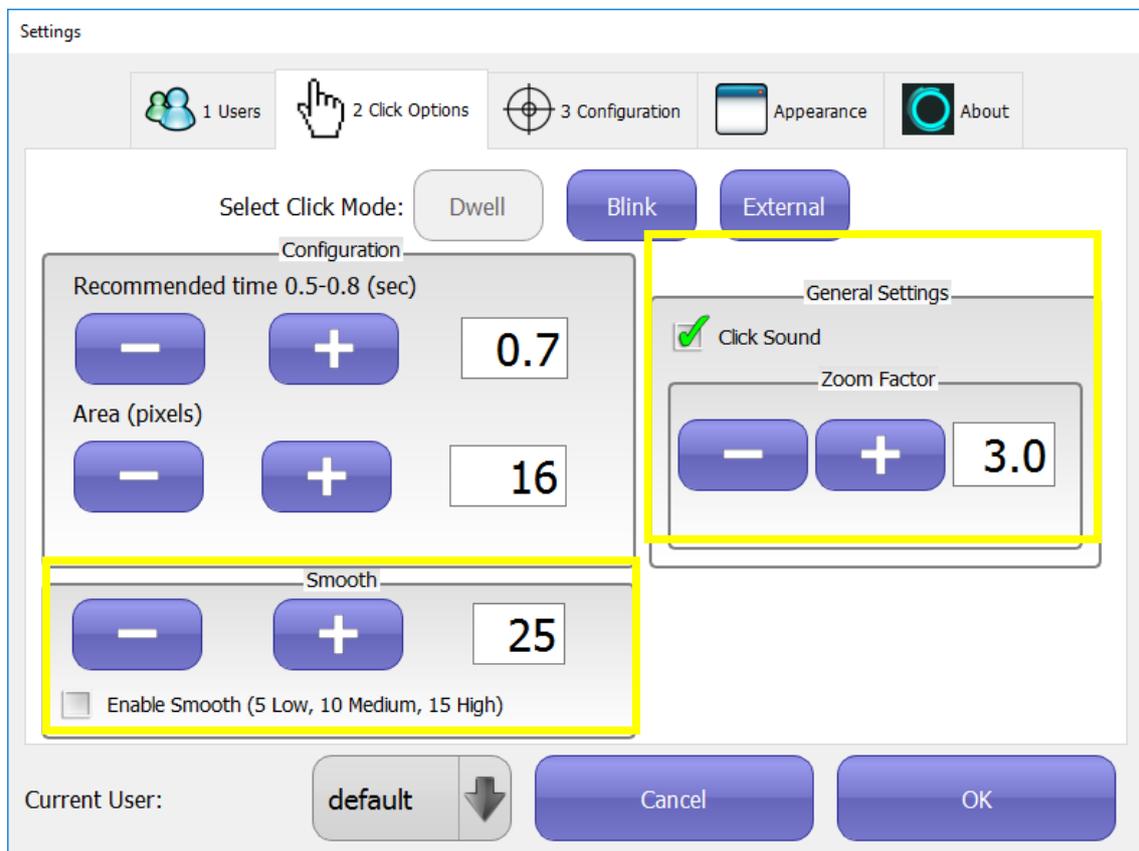


- There are no parameters to establish in the Configuration section: all that is required is to connect the mouse, switch or push button.

Shared Features of the Click Options

There are two features shared by all three click options (Dwell, Blink and External). These are: Smooth and General Configuration.

Smooth allows you to control the speed at which the cursor moves across the desktop.



To activate this feature, tick *Enable Smooth* (5 = low, 10 = medium and 15 = high).

The recommended values are 5, 10 and 15. These values can vary depending on the case. There are two ways to enter these values: using the + (more) which increases the value and – (less) buttons which decreases it; alternatively, you can enter or change the values directly in this field.

In *General Configuration*, you will find the Zoom Factor, which allows you to magnify any area of the screen when you click on the magnifying glass icon. x3 is the default setting.



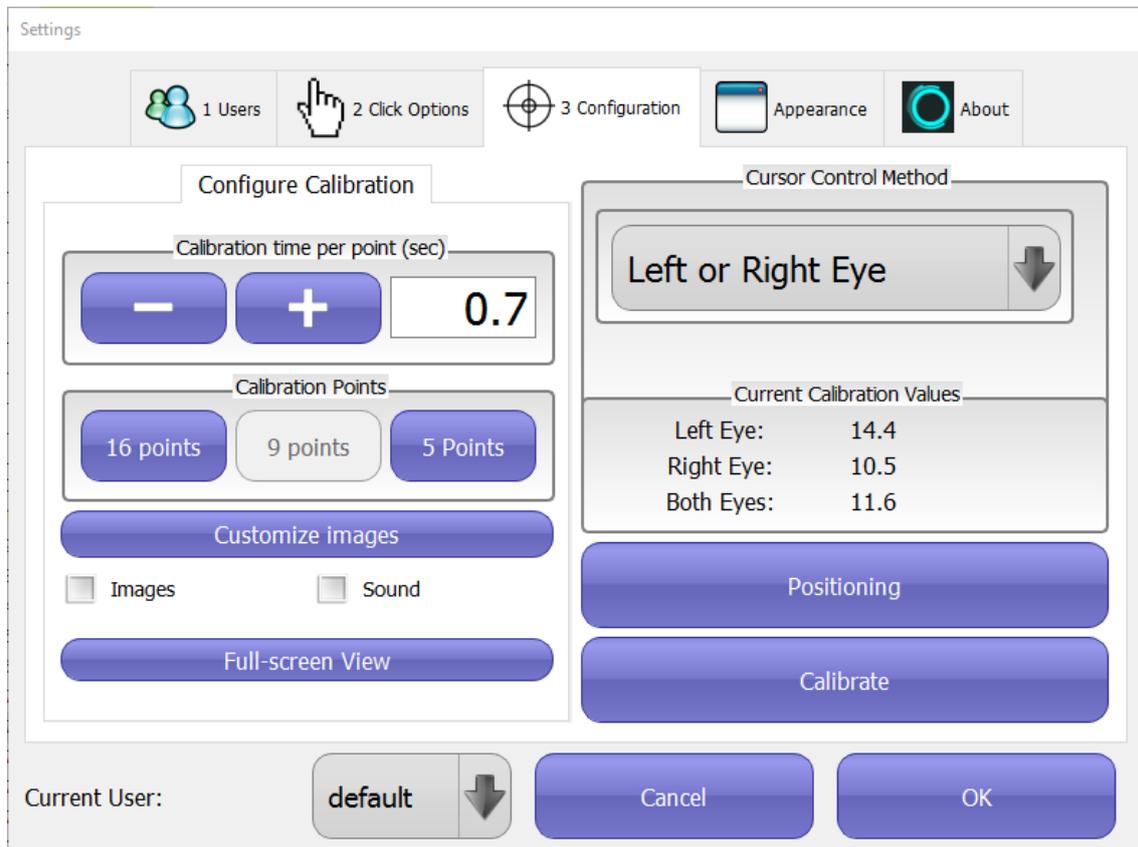
See [Primma Menu](#) for more detailed information about specific buttons.

By default the zoom factor is set at 3.0 but there are two ways to enter these values: using the + (more) button which increases the time and – (less) button which decreases the time; alternatively, you can enter or change the values directly in this field.

Configuration

Primma has an easy to use interface that allows you to calibrate the system to meet the user's needs. In order to achieve a perfect calibration, the following two actions must be completed: 1. Position yourself in front of the system and 2. use the Calibrate function.

To access this, click on tab 3. *Configuration* and the following window will appear, displaying the various configuration options.



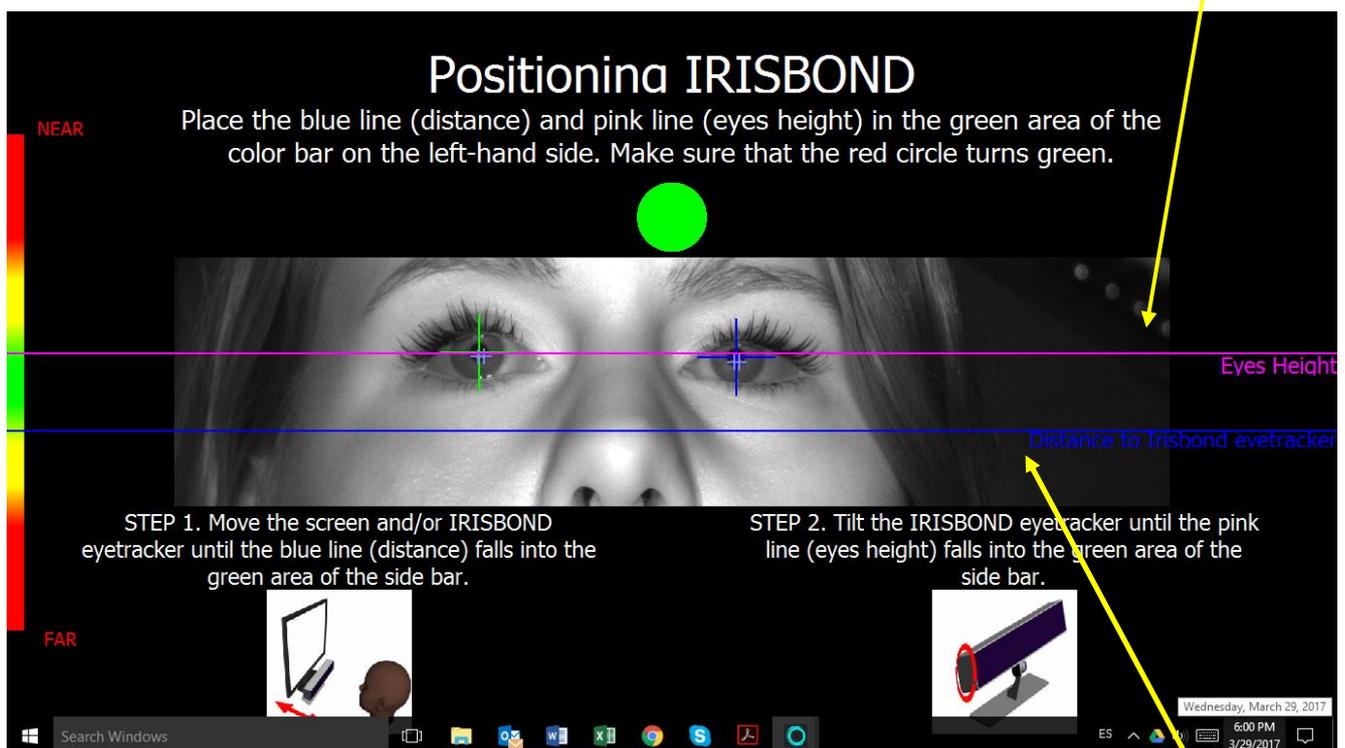
Positioning

The Positioning feature will guide you through the process of achieving optimum positioning and distance in relation to the Irisbond device.

Instructions:

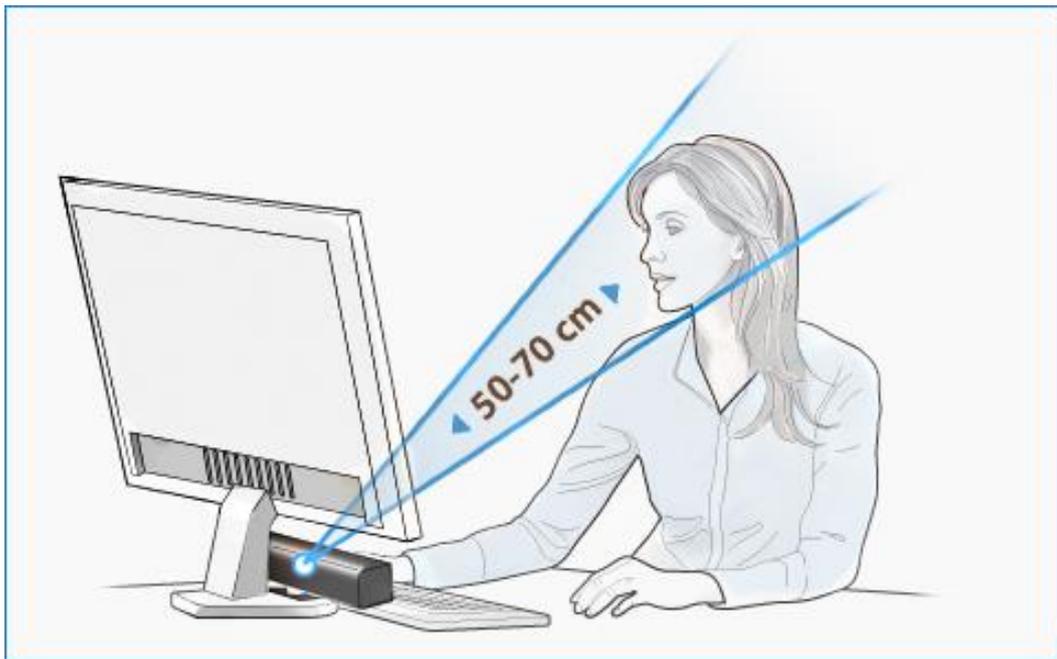
1. Click on *Positioning*. You will then see, in full-screen and real time, your eyes. Please read carefully the onscreen information. Try to position the eyetracker so that the two lines (the blue and the pink) fall in the green range.

The pink line indicates the height of your eyeline. Rotate the eyetracker until this line is in



The blue line (focus level) indicates the distance between the user and the eyetracker. Move the monitor or laptop with the Irisbond eyetracker attached until this line falls in the

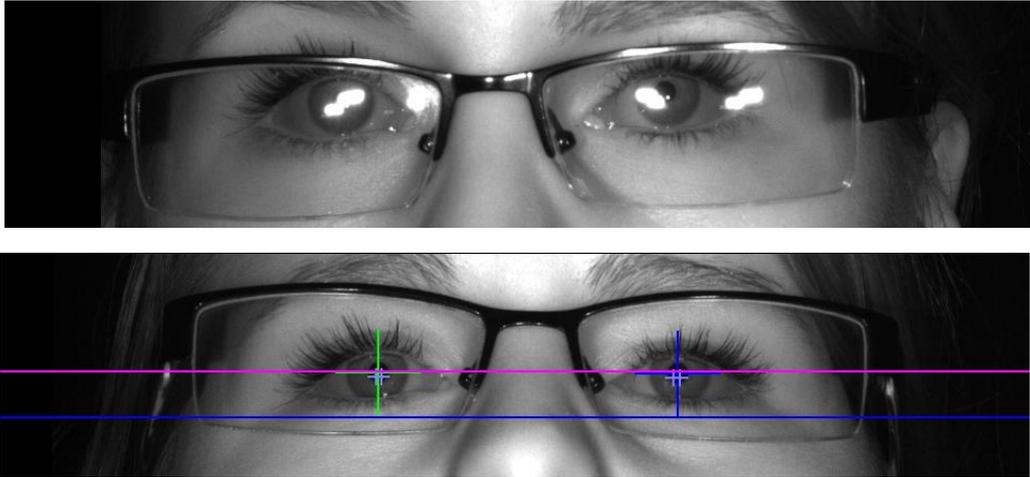
2. Next move the monitor or laptop with the Irisbond eyetracker attached so that it sits at a distance of between 50 and 70 centimeters from the user as illustrated in the diagram below). Achieve optimum positioning by moving it around until both the blue and purple lines fall in the green range.



TIP If you are using a laptop, we advise using the adhesive base specifically for laptops. Consult [p.5](#) to see the various options when positioning the Irisbond Duo eyetracker.



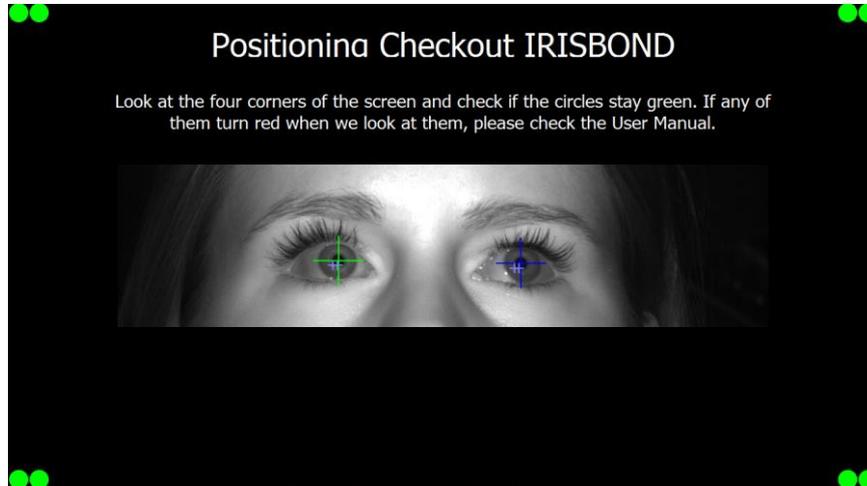
WARNING If you wear glasses, the reflection from them can decrease the system's accuracy in detecting eye movement.



HOW TO AVOID REFLECTIONS:

- Wear anti-reflective glasses.
- Make sure your glasses are clean.
- Make sure that the frames of your glasses do not cover your pupils in any way.

3. Once you have achieved this, click on any part of the screen above your eyes and a new full-screen window will open. In this window you will see two green circles in each corner of the screen which correspond to the left and right eye.



By moving your eyes, look at the top left, top right, lower right and lower left corners and check if any of the circles turn red. By doing this you will be able to check if there are peripheral vision issues.



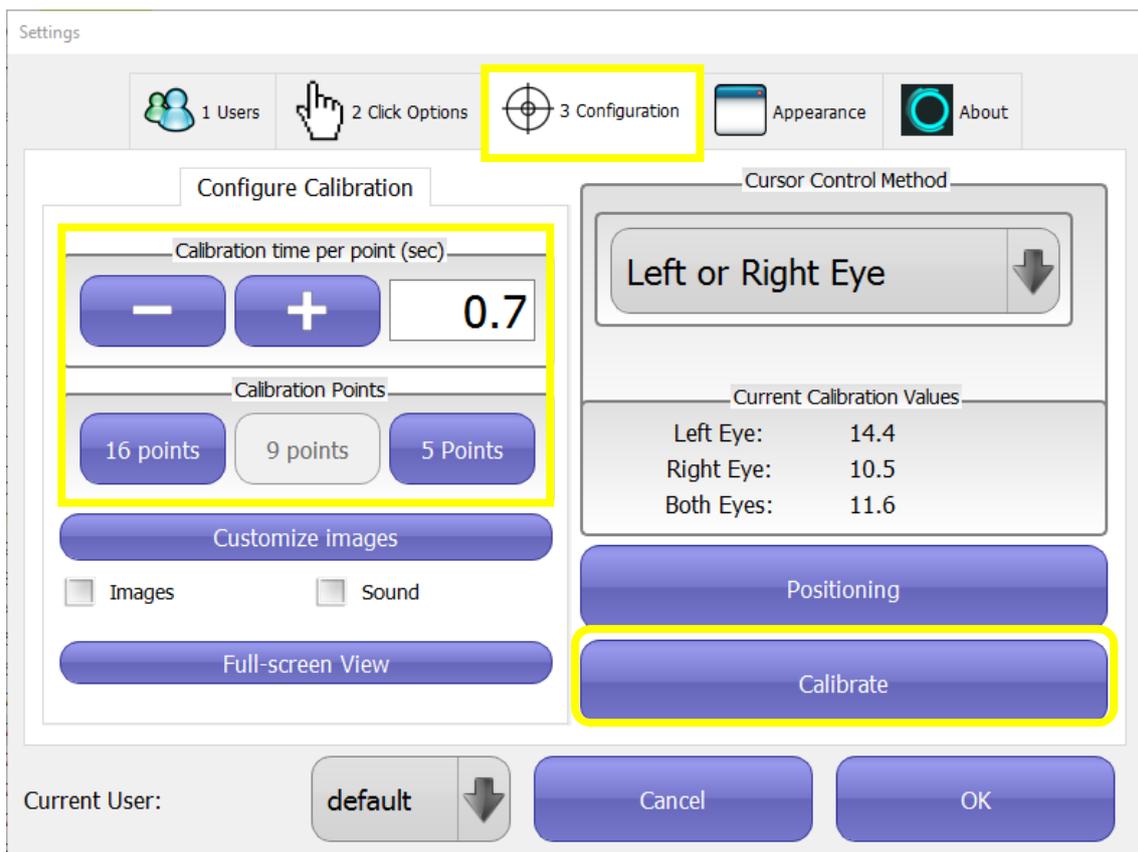
You will be able to tell that the system is tracking eye movement as a green cross will appear above the left eye and a blue one above the right eye. These two crosses are there to monitor and verify that the eyetracking is functioning correctly.

Click anywhere on the screen or hit the spacebar and you will return to the Configuration screen as you have now completed positioning.

Calibration

The calibration feature allows you to modify values and adjust the system depending on how the user moves their eyes. The process consists of following and looking at a series of targets in different areas of the screen so the system can detect your eye movements.

After a target has moved to a different point on the screen, it stays stationary for a period of time. After this time has elapsed it moves again to a different point on the screen. Both the number of targets and the time during which the targets stay stationary are parameters which can be modified.



Instructions:

1. Decide on the number of seconds during which a target will remain stationary in the *Calibration time per point (sec)* field.

The default time is 1.0 seconds; you can change this to suit your needs. There are two ways to enter the time value: using the + (more) button which increases the time and – (less) buttons which decreases the time; alternatively, you can enter or change the values directly.

2. Decide on the number of points which will be shown on the screen in the *Calibration Points* field.

By default 9 points are selected. For a more precise calibration choose 16 points. For a basic calibration, choose 5 points. To select how many points you would like, click on the corresponding button.

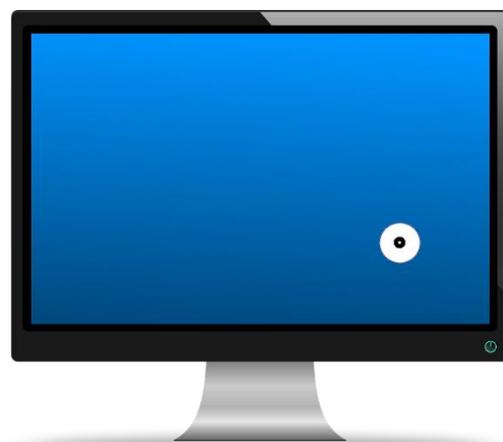


For users who have short attention span or who tire easily we recommend:

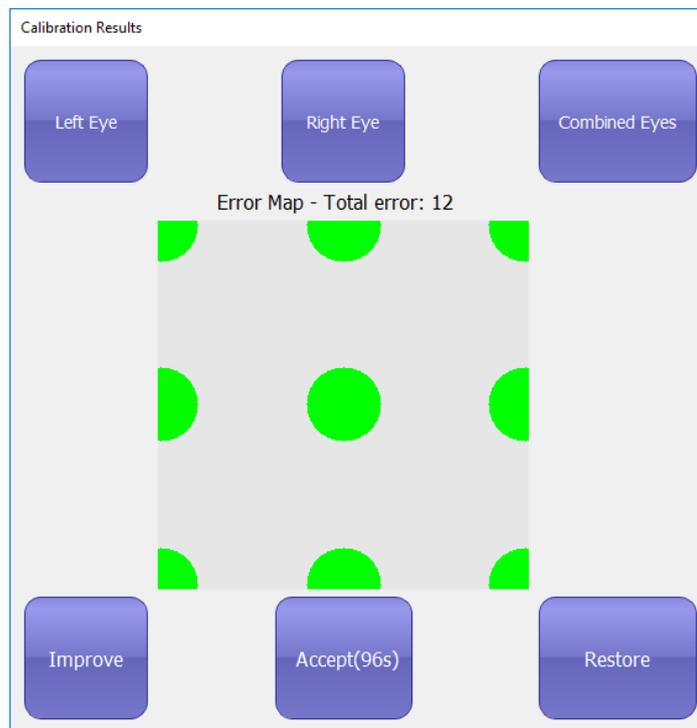
- 5 points and a longer time for each point.
- Calibration with just 1 point. See the section [Quick action buttons](#) to see the functions of all the menu buttons.

3. Start the calibration process by clicking *Calibrate*. The system will then show you a series of points in different areas of the screen and you must look at each of them.

By default each point appears as a white circle with a black spot in the middle.



- Once the process has been completed, the system displays the results of the calibration with a numerical score. The result is considered valid when the score is lower than 20 and when all circles are green. If both of these are achieved, click *Accept*.

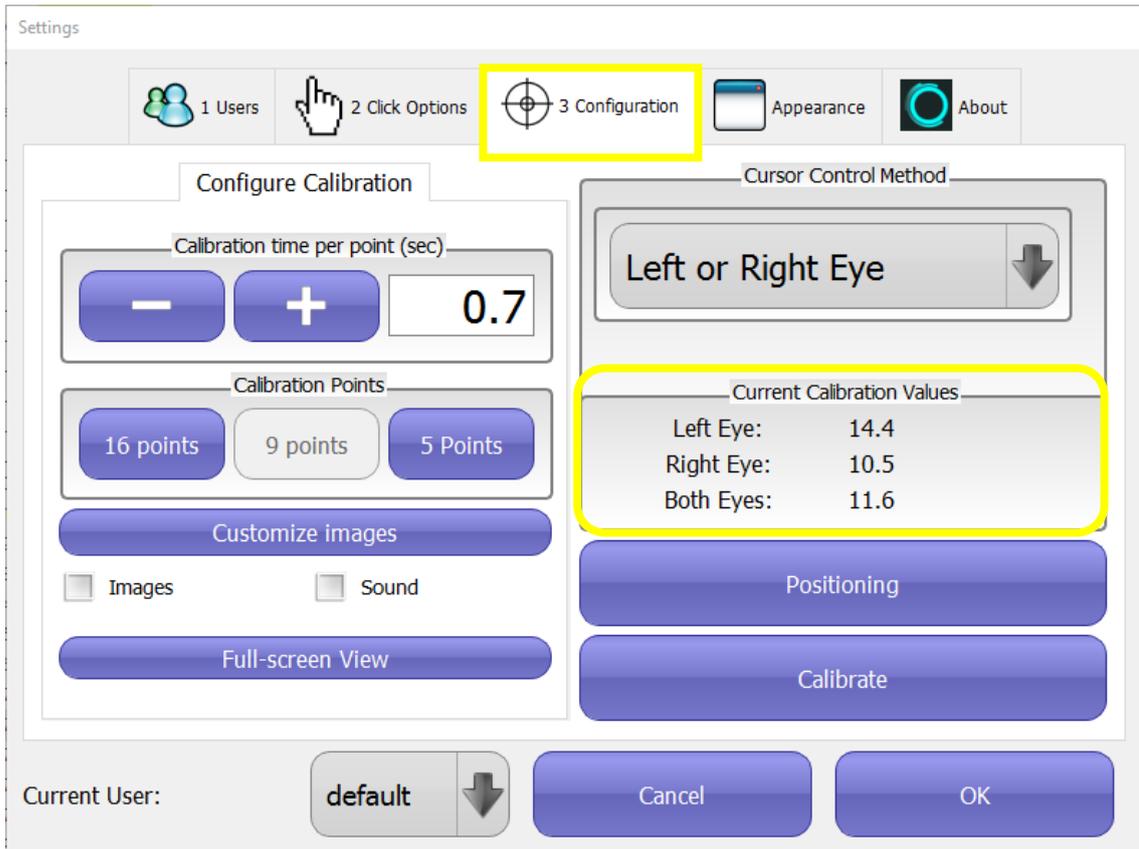


The map displayed above corresponds to the results of the calibration for both eyes. Alternatively, you can review the result of the left and right eyes separately.

To change from one result map to another, click *Left Eye*, *Right Eye* and *Both Eyes*.

Should you receive a score above 20, see [Problems that can arise during the calibration process](#).

- To finish the calibration, you can see the scores obtained by the system in the *Current Calibration Values* field.

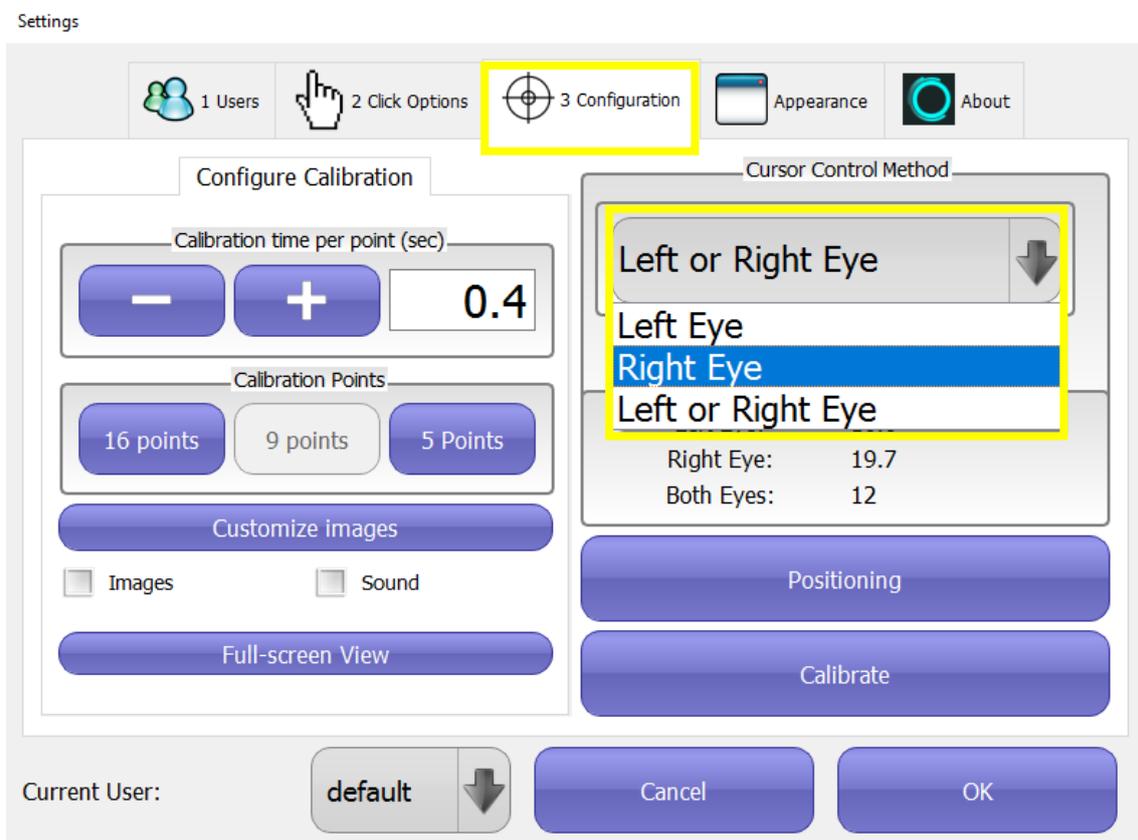


Cursor Control Method

The Irisbond system is capable of differentiating with which eye you can or can't click. This value is a parameter in the *Cursor Control Method* field.

This can be changed by clicking on the arrow and opening the drop-down list of options.

The options are the following:



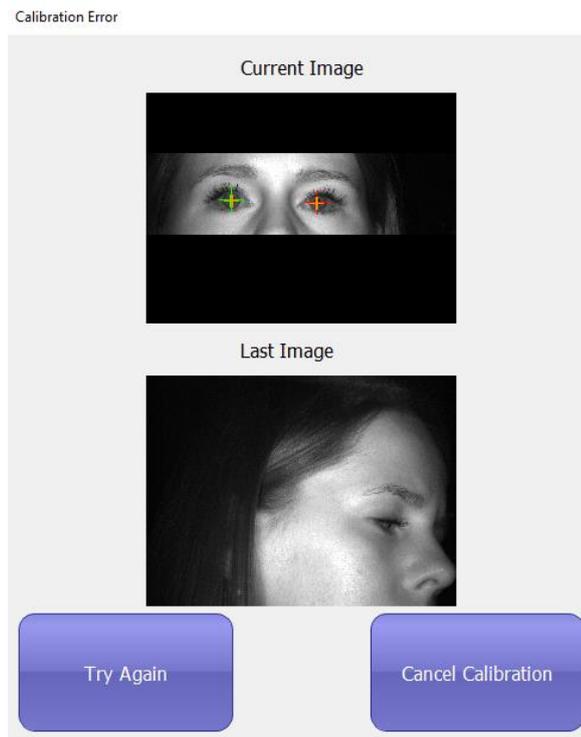
- **Left Eye:** This option allows you to click with your left eye but NOT with your right eye.
- **Right Eye:** This option allows you to click with your right eye but NOT with your left eye.
- **Left or Right Eye:** The system selects the eye (left or right) which best functions.

There are two criteria to consider when choosing any of the three options:

- a. If you know beforehand that one eye has an issue (such as a squint, a cataract, a lazy eye, nystagmus), you can decide not to use this eye before running the calibration process. You can also do this after calibrating.
- b. If the calibration results for one eye are very high (e.g. 150) and you cannot lower this to a more optimal value. In this case, you can also choose not to use this eye.

Problems that Can Arise During the Calibration Process.

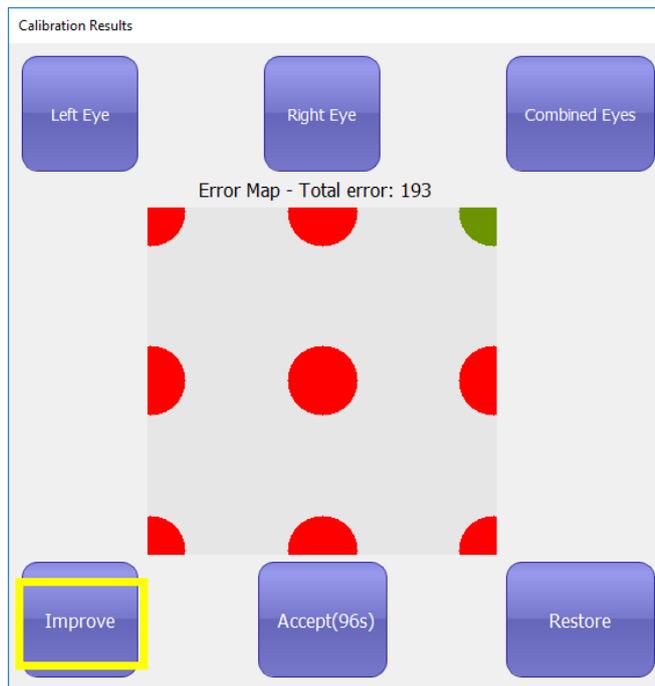
1. If during the calibration process the system is unable to detect one or both eyes, a window will open informing you at which point the problem occurred. This can happen, for example, if you partially or fully close your eyes, turn your head or if there are reflections coming off your glasses. In this case we have two options:
 - 1. **Retry.** The system replays the last target and continues with the calibration process.
 - 2. **Cancel the calibration.** The system cancels the calibration and the previous values remain unchanged.



2. Once the process has been completed, the system displays the results with a numerical score. The result is considered valid when the score is lower than 20 and when all circles are green.

However, there are cases where the *Calibration Result - Both Eyes* is higher than 20 and some of the circles are red. If this happens, there are two options:

- Click *Restore*. This cancels the calibration process and does not change the previous values.
- Click *Improve* (the recommended option). The system then launches a series of targets with the aim of reducing the previously obtained score. This action can be repeated multiple times.



WARNING The Accept button (96 s) has a time limit. If you do not click *Improve* or *Restore*, the system will automatically save the data when the timer reaches zero.

If clicking on *Improve* multiple times does not yield an acceptable score, then you will have to determine which eye has greater difficulties. In order to determine this, click on *Left Eye* and *Right Eye* and look at the calibration results for each eye.

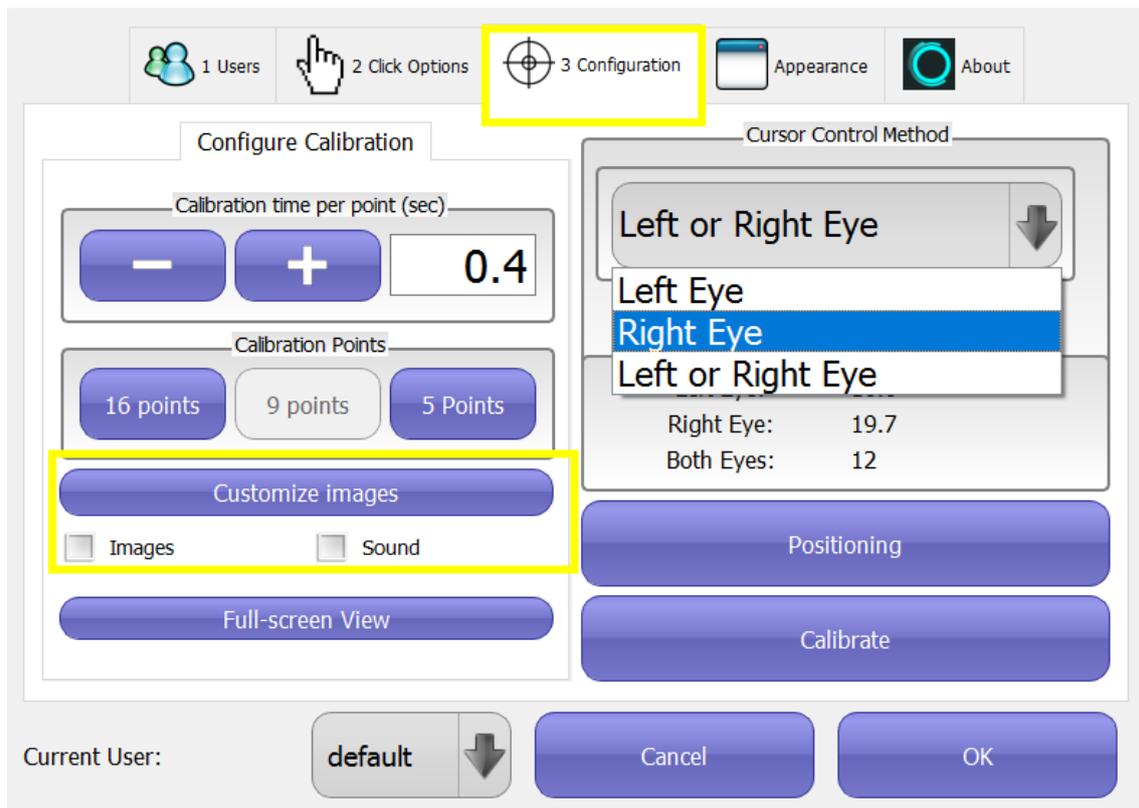
See the section [Cursor Control Method](#) for more on how to change between left, right or both eye control.

In the event that the calibration results do not decrease and are not acceptable for either eye, check if your positioning is correct, ensure there are no reflections from your glasses or pupils and/or adjust the display time for each calibration point.

Customizing Points

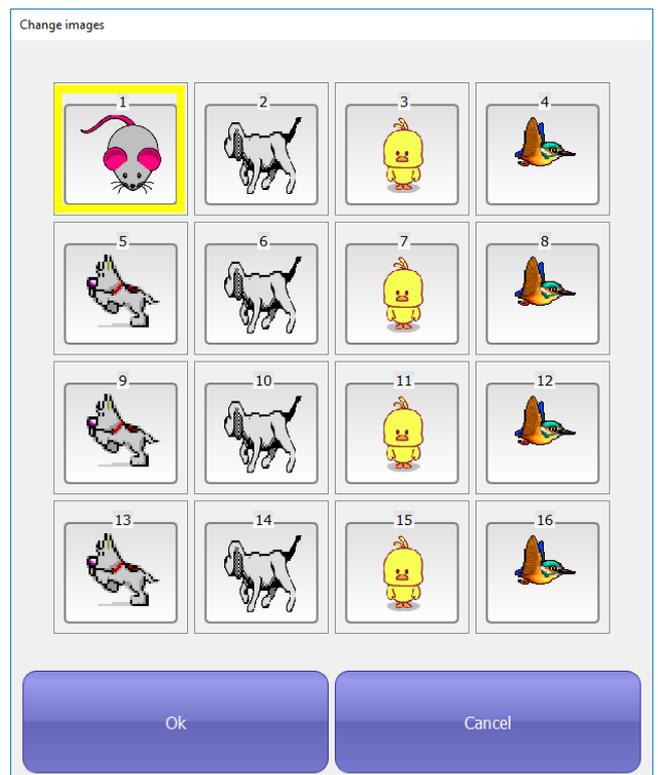
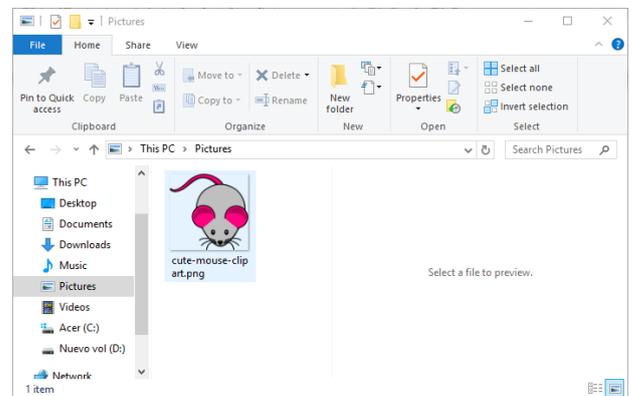
The Irisbond system allows you to customize points. The aim of this is to capture the user's attention by using the *Customize Images* feature.

Settings



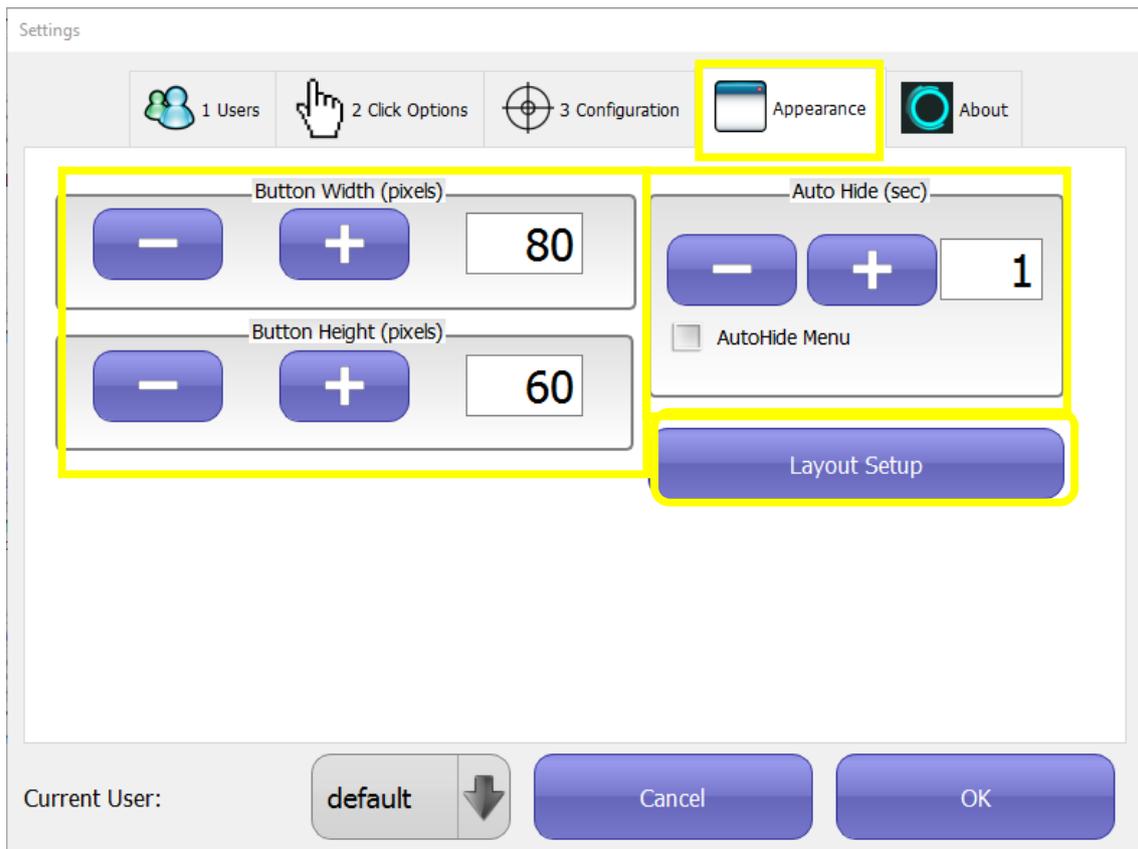
1. Customizing with sounds. By default the targets do not have accompanying sounds. However, you can add sounds by clicking *Sound*.
2. Customizing the target's appearance. The system allows you to change the appearance of the target by clicking *Customize Images*. A window will

automatically open that allows you to select from a series of images; click on the image you want to replace, then select the image of your choice and click Accept. Irisbond will confirm that you have changed the image.



Appearance

The Irisbond system has a button-based menu which allows the user to give commands to the system. Irisbond has a screen which allows the user to configure the appearance of the menu and/or hide features in the Appearance tab.



Button Width (pixels)

The system allows you to change both the height and width of the buttons to meet a user's specific needs.

Instructions:

1. By default buttons are 80 pixels in width and 60 pixels in height. However, this can be changed. There are two ways to enter these values: using the + (more) which increases the width or height and – (less) buttons which decreases them; alternatively, you can enter or change the values directly in this field.

Auto Minimize Menu (sec)

By default the system does not automatically minimize the menu. Should you wish the menu to minimize automatically, tick the *Hide Menu Automatically* box and then enter the time you wish to elapse before the menu minimizes.

There are two ways to enter these values: using the + (more) which increases the time and – (less) buttons which decreases the time; alternatively, you can enter or change the values directly in this field.

Configuring buttons

The Irisbond system allows you to show or hide buttons according to your needs. To do this, first click *Layout Setup*.

Instructions:

1. To hide button(s), select the button you wish to hide and drag and drop it into the box on the left.



The button will then be hidden in the menu.



- To unhide a button, click *Layout Setup* and drag the icon from the box on the left and drop it into one of the empty boxes in the menu.



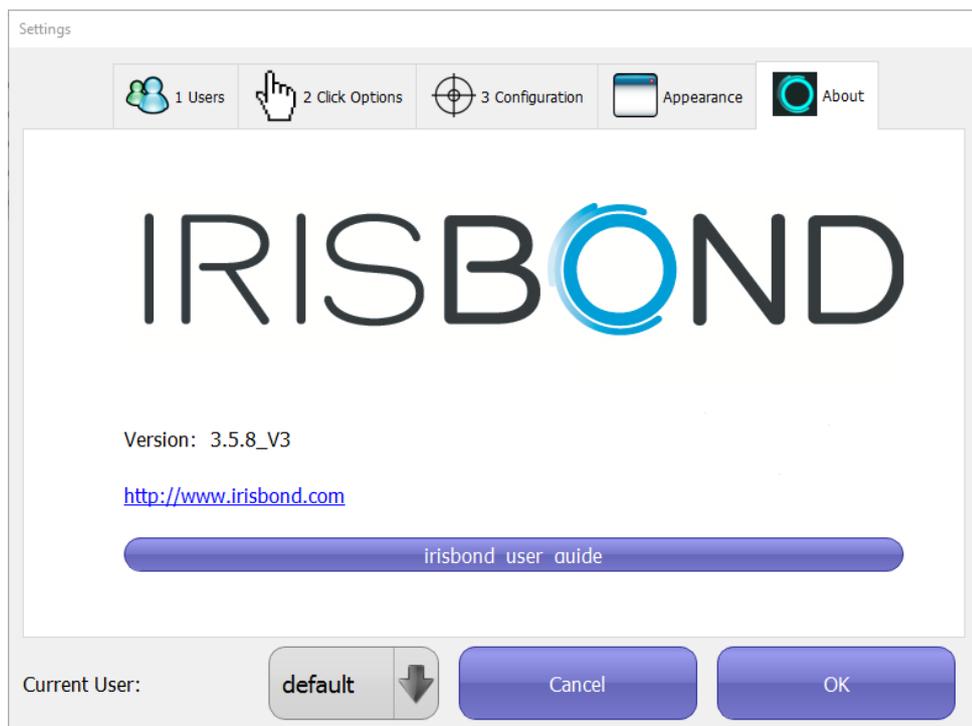
The button will then be shown in the menu.



About

The About tab displays the following information:

- Current version of the system
- A link to the Irisbond web page <http://www.irisbond.com> where you can find the latest news, updates, installation requirements, videos, downloads and items of interest. By clicking the *Irisbond User Manual* button you can access online the User Manual, and should you wish to do so, download it.



Primma Menu

The Irisbond system has a user menu comprised of buttons which execute a concrete action.



Depending on the action we can put these buttons into two categories:

- **Instant or Quick Action Buttons.** By clicking on these buttons, an action is executed.
- **Buttons with a click function.** By clicking on these buttons, you inform the system what you wish to do with the subsequent click.

Instant or Quick Action Buttons

Each button has a certain action which is executed by clicking on them. These actions are the following:



Enable

Activates cursor control by moving your eyes. Click by hand using the mouse.



Disable

Deactivates eyetracking cursor control. Click by hand using the mouse or click by controlling the mouse with your eyes.



Rectify

If you have experienced a loss of precision whilst using the system, you can launch a single point calibration process to improve precision. If you continue to have precision problems, you will need to



Start Menu

Opens the Windows Start Menu.



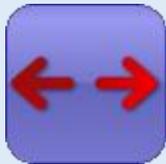
Minimize

Minimizes the user interface and creates an icon in the task bar. To return to the menu, click the Primma icon on the task bar.



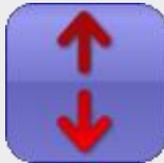
TIP If you have difficulties in carrying out a full calibration, you can use the **Rectify** button to carry out a single point calibration. By doing this you can play some games or use basic applications which do not require much precision.

carry out a full calibration process.



Move Left/Right

Moves the entire user interface to the left/right.



Move Up/Down

Moves the entire user interface up/down.



Settings

Opens the Settings menu.



Pause Button

Clicking this button makes the cursor immobile. To be able to move the cursor you must click this button again.



Reading Mode

Reading Mode is used to surf the web and read text documents (e.g. PDFs). The cursor is hidden in this mode so as not to be a nuisance while reading.



By looking at the arrow, the page will move up.



Exit and control the mouse again.



By looking at the arrow, the page will move down.

Buttons with a Click Function

With these buttons the Irisbond system is able to execute the functions of an ordinary mouse. They allow you to execute actions such as drag and drop, double click to open applications or right click to open a context menu...

For example, to run or launch Google Chrome you must do the following:

- First, tell the system the action you wish to execute by clicking on the double click icon.



- Second, click on the Google Chrome browser icon.



Buttons with a click function have three states:

Deactivated

Activated

- Activate the button by clicking.
- This executes the action one time.
- Once the action has been completed, it returns to the “Deactivated” state.

Permanently Activated

- The button is activated permanently by clicking on the button twice.
- The action will be repeated indefinitely.
- By clicking on the button a third time, the button returns to the “Deactivated” state.

Zoom



Action: Magnifies the area around wherever you click.

Right Click



Action: Right click

Double Left Click



Action: Double left click

Deactivated**Activated**

- Activate the button by clicking.
- This executes the action one time.
- Once the action has been completed, it returns to the “Deactivated” state.

Permanently Activated

- The button is activated permanently by clicking on the button twice.
- The action will be repeated indefinitely.
- By clicking on the button a third time, the button returns to the “Deactivated” state.

Right Click Drag and Drop

Action: Executes a right “drag and drop” in two steps:

- With the first click select the item you wish to move and “drag” it with your gaze.
- By moving your eyes, the item also moves. With the second click a menu opens next to the object which offers you the options to move, copy, create a short cut or cancel the action.

If you do not select an item, the first click will start to select an area and the second click will define this area.

Left Click Drag and Drop

Action: Executes a “drag and drop” in two steps:

- With the first click select the item you wish to move and “drag” it with your gaze.
- By moving your eyes, the item also moves; with the second click you release it.

If you do not select an item, the first click will start to select an area and the second click will define this area.

Certifications

The Irisbond eyetracker complies with relevant European Guidelines and Directives and has been tested by a certified laboratory in accordance with the following standard(s):

- Electromagnetic compatibility
 - Standard **UNE-EN 55024:2010** and **UNE-EN 55024:2010** Information Technology Equipment. Characteristics of radio interference. Electromagnetic Emissions.
 - Standard **UNE-EN 61000:2010** Information Technology Equipment. Immunity characteristics. Electromagnetic Immunity.

- Infrared light security
 - Standard **UNE-EN 62471-1:2009** Photobiological safety of lamps.

Troubleshooting

PROBLEM: Calibration result is very high.

SOLUTION: We recommend checking the following:

- Ensure the eyetracker is below the screen.
- Check that your positioning is correct.
- During calibration open your eyes fully and look at the center of each point when it stops moving.
- Adjust calibration values. For example, repeat the calibration process with a longer display time per point or with fewer points (9, 5, 1). Increase stimulus to attract greater attention and concentration from the user by adding sounds or changing the points to pictures.
- Check that there are no rays of light falling directly on the eyetracker.
- Clean your glasses to avoid any possible light reflection.
- Poor lighting. It is necessary to have sufficient lighting so that pupils are not too dilated.

PROBLEM: Eye detection is not working correctly in the peripheries of the screen.

SOLUTION:

- The Irisbond eyetracker is not correctly positioned.
- The eyetracker must be situated as close as possible to the lower area of the screen without obstructing it. You must be positioned according to the guidelines in the section [Positioning](#).

PROBLEM: The system's precision is poor.

SOLUTION:

- You may have unknowingly moved into a different position from the time when you did the initial calibration. Return to the initial position or launch a new calibration process.

PROBLEM: The system does not recognize the Irisbond eyetracker.

SOLUTION:

- Check that the USB cable is correctly connected at both the eyetracker and computer ends.
- The cable should not be connected to USB ports on the front of computer towers.
- Check that you are using the USB cable originally supplied with the Irisbond eyetracker.
- Always be careful when using USB extension cables as they can cause this problem also.

PROBLEM: The mouse stops working when you try to install an application in Windows 7 or 8.

SOLUTION:

- Right-click on the Primma icon on the desktop, click “Properties” -> “Compatibility” and select “Run this program as an administrator”.

Open Source Library Licenses

The Irisbond system uses certain open code libraries in order to run. According to the regulations set out in the collective license agreements of the **Open Source Initiative (OSI)** (<http://opensource.org/licenses/>), please see below the list of references and license agreements:

- * OpenCV v2.4.3 (<http://opencv.org/>)
- * Qt Project v4.8.2 (<http://qt-project.org/>)
- * Imfit v3.3 (<http://apps.jcns.fz-juelich.de/doku/sc/Imfit>)
- * VideoMan Library 1.1 (<http://videomanlib.sourceforge.net/>)

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