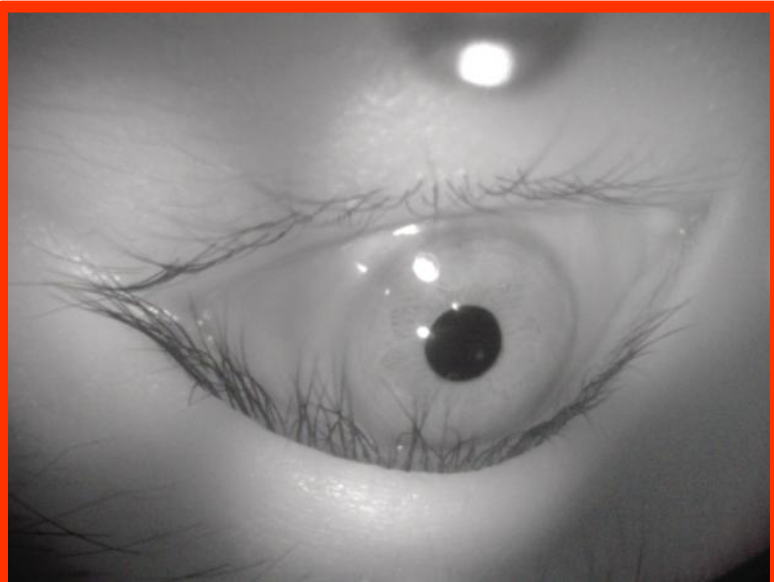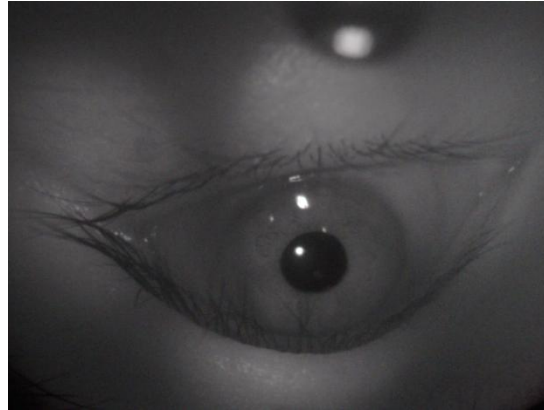# [1] Camera Configuration

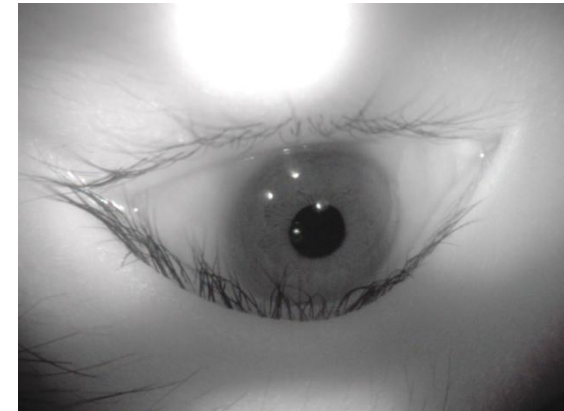<Good!>

Wrong examples

<Too Dark>

<To Bright>

First, configure your webcam by opening your camera's control panel

(In case of PS3 Eye Camera)
 - execute "CL-Eye Test"
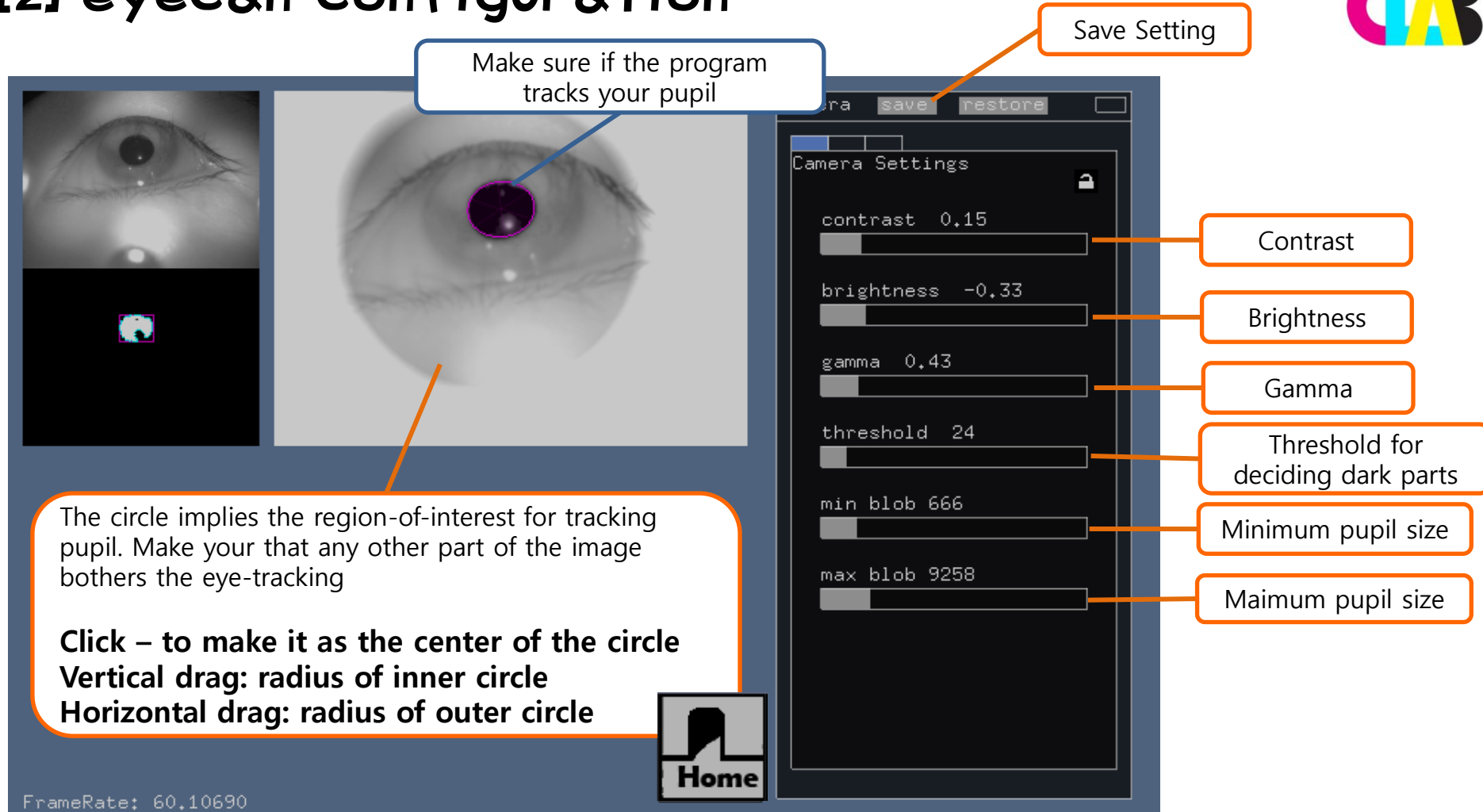 - (Menu) Options->Video Capture Filter...

<Blurry>

<Shadow>

[2] eyeCan Configuration

Make sure if the program tracks your pupil

Contrast

Brightness

Gamma

Threshold for deciding dark parts

Minimum pupil size

Maimum pupil size

The circle implies the region-of-interest for tracking pupil. Make your that any other part of the image bothers the eye-tracking

Click – to make it as the center of the circle
Vertical drag: radius of inner circle
Horizontal drag: radius of outer circle

Camera Settings

contrast 0.15

brightness -0.33

gamma 0.43

threshold 24

min blob 666

max blob 9258

save restore

Home

FrameRate: 60.10690

contrast/ brightness/ gamma: Change these parameters to adjust the image brightness and contrast

threshold: the threshold for discriminating dark pixels from bright pixels
(higher the value, more pixels will be regarded as 'dark')

min blob/ max blob: 'Dark' pixel blob that is inside this range will be detected as a pupil
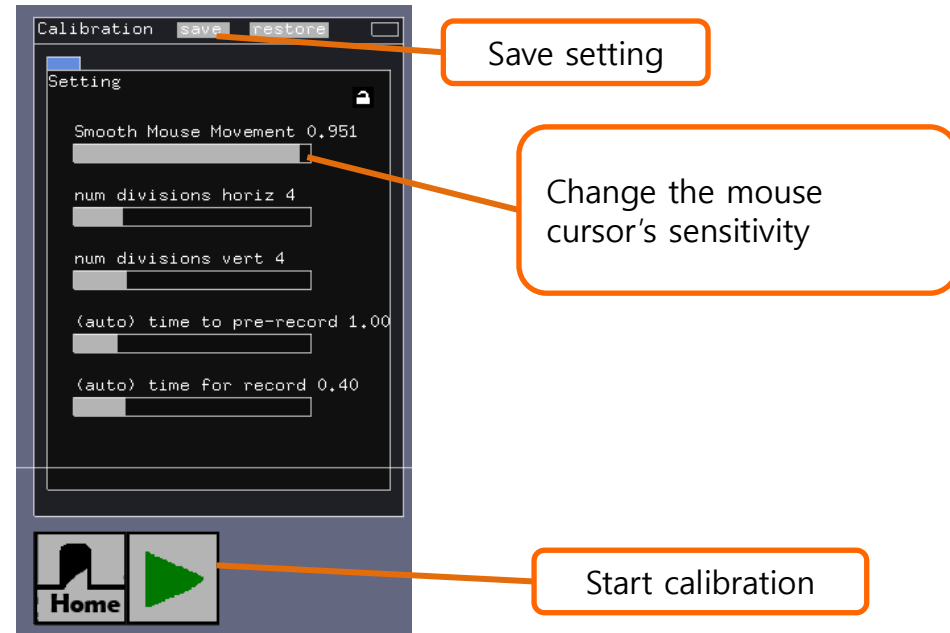
[3] Calibration

Calibration is a process to map your eye movement to cursor movement on the computer screen

This is needed anytime when you
 - first use eyeCan
 - changed your pose or moved head so that previous calibration has been gone wrong.

To start calibration,
 - Push the 'play button like' button
 - after help message is shown, click anywhere on the screen

Calibration save restore

Setting

Smooth Mouse Movement 0.951

num divisions horiz 4

num divisions vert 4

(auto) time to pre-record 1.00

(auto) time for record 0.40

Home

Save setting

Change the mouse cursor's sensitivity

Start calibration

During calibration, look at the red dots appearing on the grids, without blinking eyes
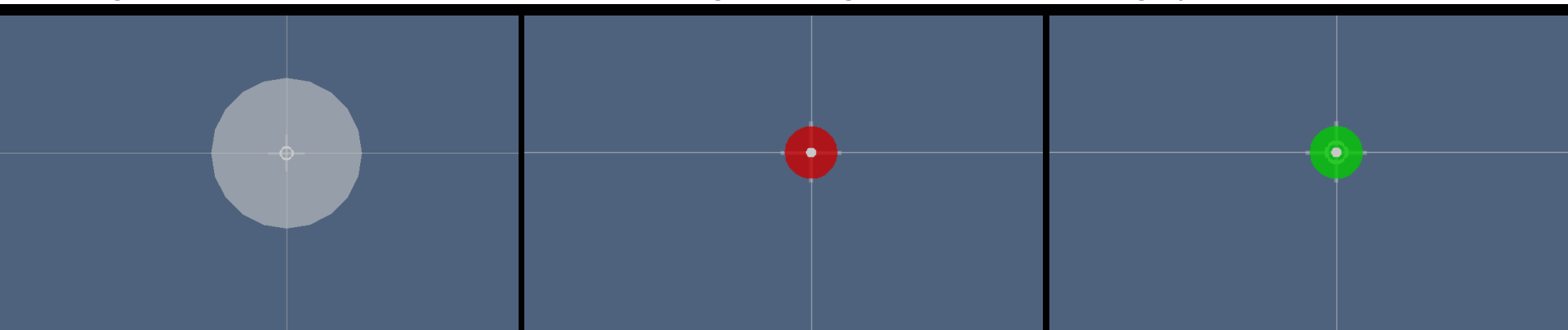
(Ready) prepare to look   **(recording) look at the red dot**   **(done) done**

After calibration is done, the result is shown on the screen.
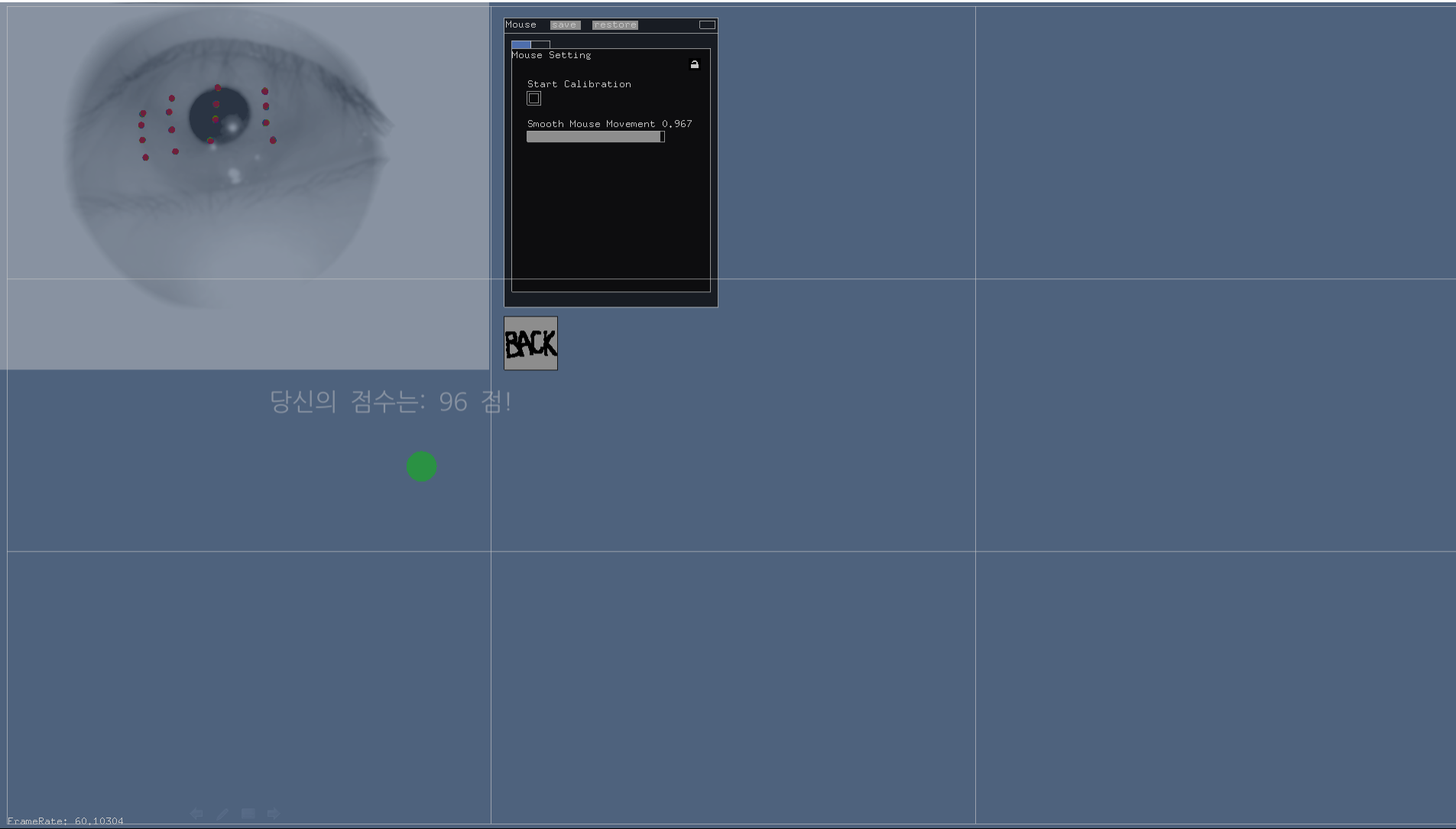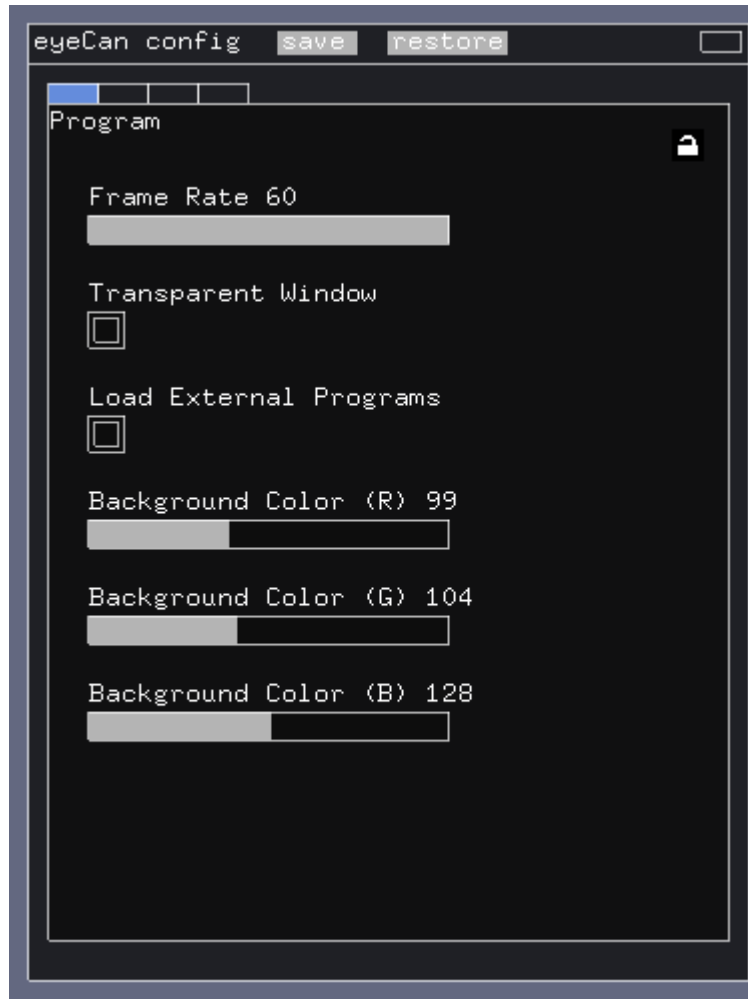The score presented should be over 90 for reliable eye-tracking.

Mouse   save   restore

Mouse Setting

Start Calibration
☐

Smooth Mouse Movement 0.967

BACK

당신의 점수는: 96 점!

FrameRate: 60.10304

Advanced Settings (Settings.exe)

```
eyeCan config    save    restore               ☐

Program                                         🔓

    Frame Rate 60
    �â–ˆâ–ˆâ–ˆâ–ˆâ–ˆâ–ˆâ–ˆâ–ˆâ–ˆâ–ˆâ–ˆ

    Transparent Window
    â–¡

    Load External Programs
    â–¡

    Background Color (R) 99
    ▢████▁▁▁▁▁

    Background Color (G) 104
    ▢████▁▁▁▁▁

    Background Color (B) 128
    ▢█████▁▁▁▁
```

eyeCan Main Setting

Frame Rate
: framerate for the application

Transparent Window
: transparency option
(should be unchecked on XP)

Load External Programs
: not used

Background Color (R)
: background color (R value)
Background Color (G)
: background color (G value)
Background Color (B)
: background color (B value)

In the (eyeCan program folder)\data\settings folder, you can edit settings.xml

(additional values)
alarmTone : alarm tone file path
locale : locale

important)
1) if the PC does not support the framerate setting, you should adjust your framerate setting to an appropriate value that your PC supports.

Advanced Settings (Settings.exe)

Mouse Settings

Click Helper Box Size
> : size of the bounding box that shows when using click helper
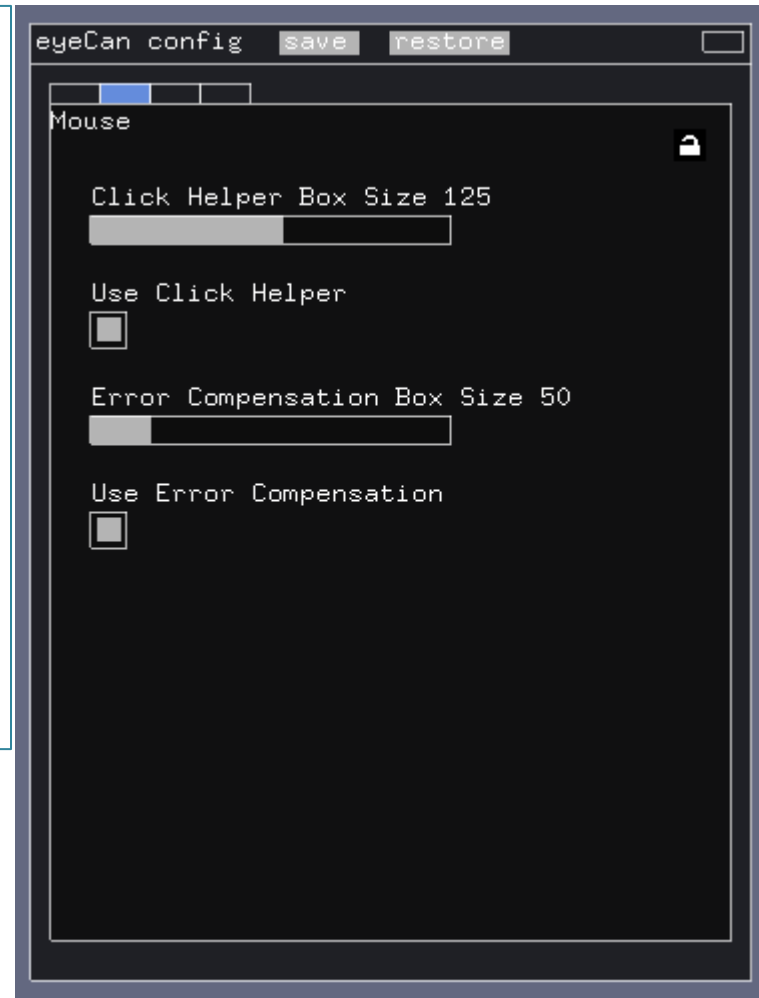
Use Click Helper
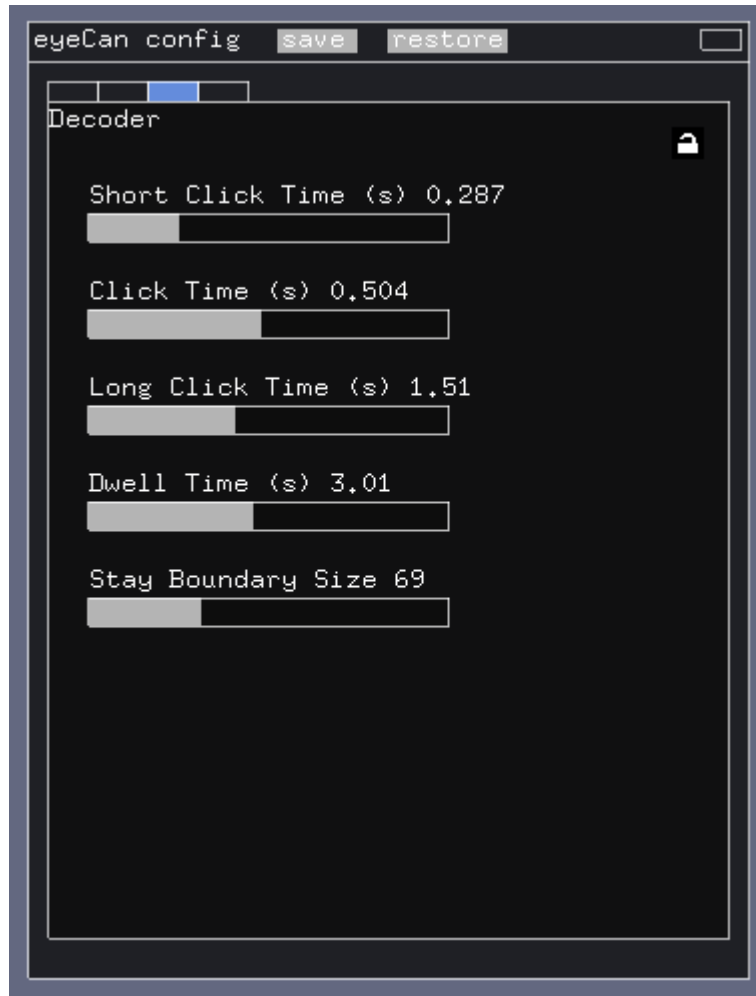> : enable/disable click helper

Error Compensation Box Size
> : size of the bounding box that shows when using error compensation

Use Error Compensation
> : enable/disable error compensation

eyeCan config [save] [restore]

Mouse

Click Helper Box Size 125

Use Click Helper

Error Compensation Box Size 50

Use Error Compensation

Advanced Settings (Settings.exe)

```
eyeCan config  [save]  [restore]                    [□]

 ┌──┬──┬────┐
 │  │  │    │
Decoder                                              🔓

    Short Click Time (s) 0.287
    ▐██████─────────────────────▌

    Click Time (s) 0.504
    ▐████████████──────────────▌

    Long Click Time (s) 1.51
    ▐████████████──────────────▌

    Dwell Time (s) 3.01
    ▐████████████──────────────▌

    Stay Boundary Size 69
    ▐████████──────────────────▌
```

Eye Movement

Short Click Time
            : Short click time (default 0.25s)

Click Time
            : Click time (default 0.5s)

Long Click Time
            : Long click time (default 1.5s)

Dwell Time
            : Dwell time (default 3.5s)

Stay Boundary Size
            : Dwell decision boundary (default 50 pixels)

Advanced Settings (Settings.exe)

Camera Input Setting

Input Mode
: 0 – always should be

Input Device
: camera device ID

Input Width
: input width (pixel)

Input Height
: input height (pixel)

```
eyeCan config   save   restore        ▭

 Input                              🔓

      Input Mode (0:live video, 1:video file)
      ▢

      Input Device 1
      ▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭

      Input Width 640
      ▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭

      Input Height 480
      ▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭
```