VPixx Release Guide

Version 3.5, Server Edition

Table of Contents

Overview

This release guide provides installation and usage information relating to the latest VPixx Software Tool release.

For technical questions or product support information, do not hesitate to contact the VPixx support team by phone or by sending an E-mail to support@vpixx.com

By creating your *MyVPixx* account on the VPixx Technologies website, you will have access to additional product documentation, demos, source code examples and the latest firmware and software drivers.

Relevant Firmware Information

DATAPixx3: Rev 14
TRACKPixx3: Rev 16
PROPixx: Rev 52
VIEWPixx: Rev 52

VPixx Device Server

The VPixx Device Server allows users to have VPixx devices open and detected using different software applications (Python, MATLAB, etc.). The USB connection for the VPixx devices is established by a single process which allows any other program to detect and communicate with them. This enables you to have PyPixx, MATLAB, VPutil, etc. opened at the same time. You can also have the programs run on a control computer while another computer presents stimuli.

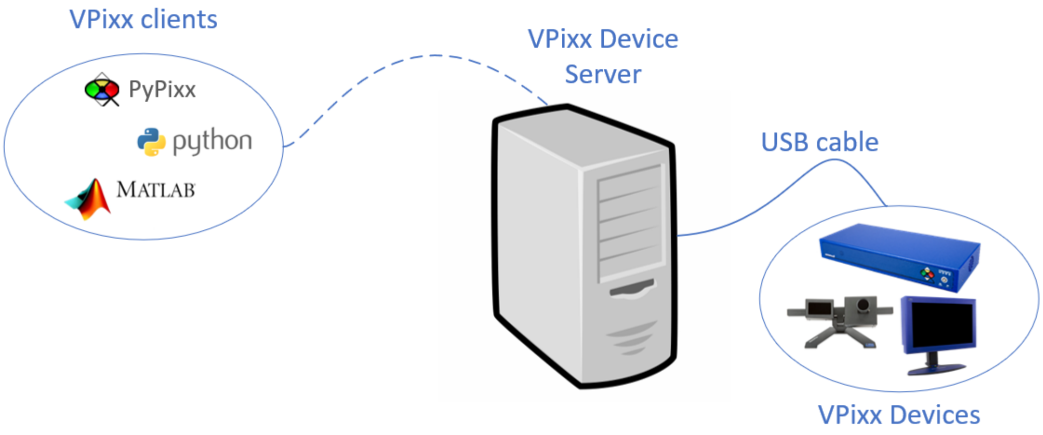


FIGURE 1 VPIXX DEVICE SERVER DIAGRAM

The VPixx Device Server uses TCP/IP to transmit its data. This is a very fast protocol used in many similar applications. The delay this causes when compared to accessing the devices directly is in the microsecond range. For timing critical experiments, the server is an approved solution for use with your VPixx devices.

As soon as your computer is turned ON, or when any VPixx devices are turned ON, the server will receive information from your devices and make them available to all programs. This verification is done in a loop and there should be no delay between turning a device ON and being able to use it.

The server is a multi-threaded tool, meaning that any number of queries can be sent simultaneously. However, some critical operations will lock the device such that multiple operations cannot run concurrently. For example, when a firmware update is being completed, no other device can access or modify the device in order to prevent firmware update issues.

Updating your setup to use the server

The fact that the server will be handling all USB transactions means that **any files you were previously using (MATLAB toolbox, PyPixx, VPutil, VPixx Program) must be updated to a version able to access the devices**. To know how to update your specific program, see their appropriate section.

The server is created such that you should not see any changes in your code after the update is completed. However, should you encounter any hardware issues which would normally be solved by restarting the program you were using, you will need to restart the VPixx Device Server. The procedure to do this depends on the operating system you are using. The next section will cover the installation, starting, stopping and debugging processes for the operating systems we support.

Windows

On Windows, the VPixx Device Server is automatically installed via our *VPixxSetup.exe* installer. The server is installed as a Windows Service, similar to many other processes that run automatically when your computer starts. This service starts after your computer boots up.

To access the server's status and verify that it is well installed, you must access the 'Services' information tool in Windows. This can be found by searching 'Services':

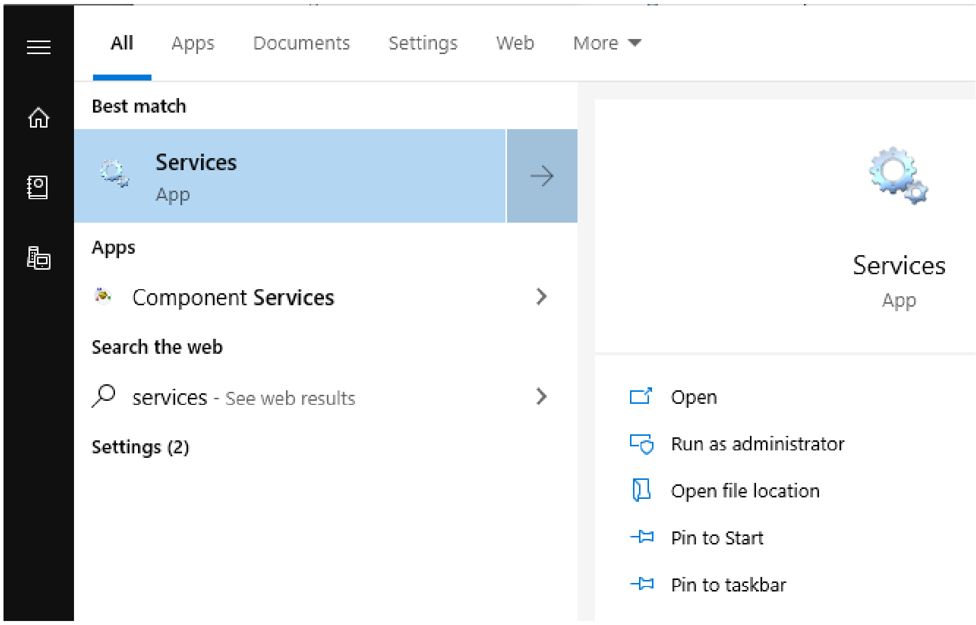
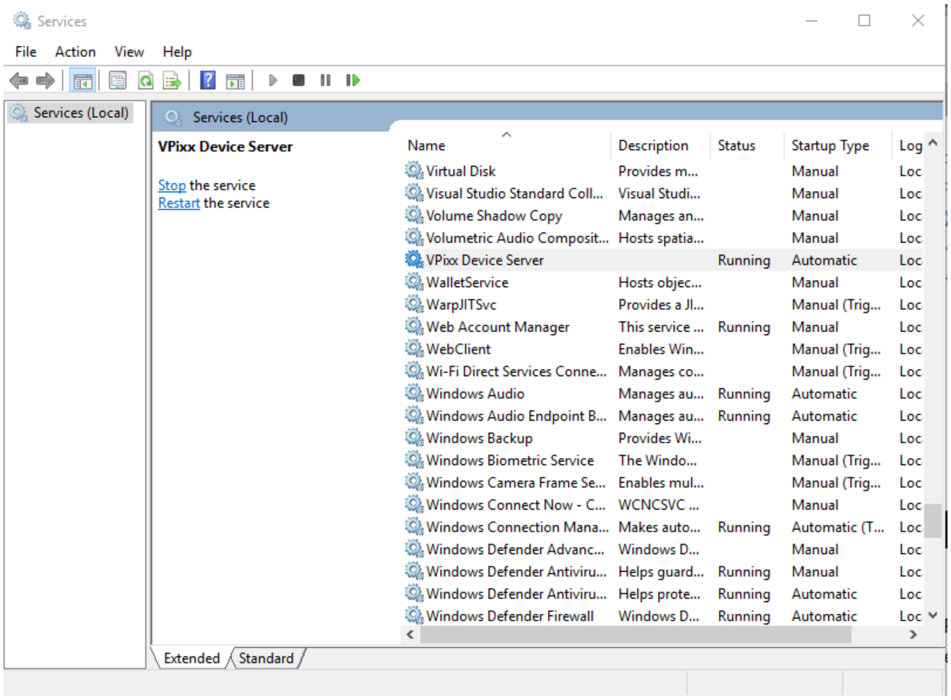


FIGURE 2 SERVICES INFORMATION TOOL

In the Services window, you can locate the VPixx Device Server. At this location, you can start, stop, restart or uninstall the service should you need to.



VPixx Device Server

Stop the service
Restart the service

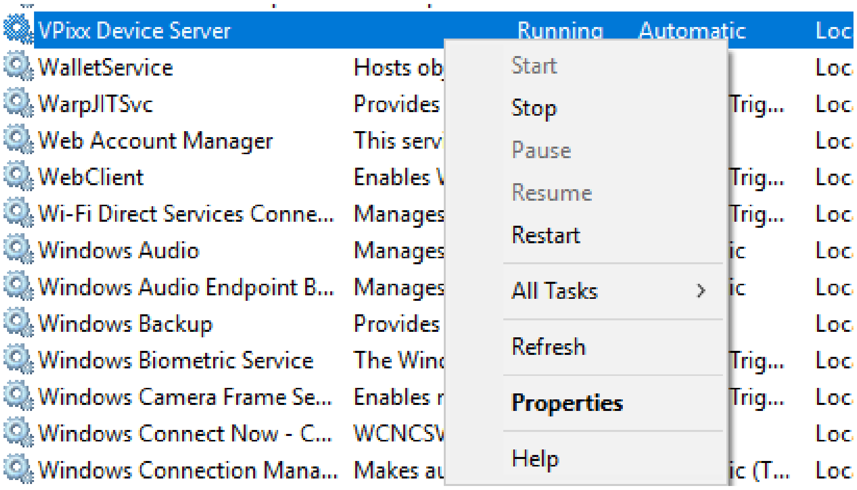
Name	Description	Status	Startup Type	Log
Virtual Disk	Provides m...		Manual	Loc
Visual Studio Standard Coll...	Visual Studi...		Manual	Loc
Volume Shadow Copy	Manages an...		Manual	Loc
Volumetric Audio Composit...	Hosts spatia...		Manual	Loc
VPixx Device Server		Running	Automatic	Loc
WalletService	Hosts objec...		Manual	Loc
WarpJITSvc	Provides a JI...		Manual (Trig...	Loc
Web Account Manager	This service ...	Running	Manual	Loc
WebClient	Enables Win...		Manual (Trig...	Loc
Wi-Fi Direct Services Conne...	Manages co...		Manual (Trig...	Loc
Windows Audio	Manages au...	Running	Automatic	Loc
Windows Audio Endpoint B...	Manages au...	Running	Automatic	Loc
Windows Backup	Provides Wi...		Manual	Loc
Windows Biometric Service	The Windo...		Manual (Trig...	Loc
Windows Camera Frame Se...	Enables mul...		Manual (Trig...	Loc
Windows Connect Now - C...	WCNCSVC ...		Manual	Loc
Windows Connection Mana...	Makes auto...	Running	Automatic (T...	Loc
Windows Defender Advanc...	Windows D...		Manual	Loc
Windows Defender Antiviru...	Helps guard...	Running	Manual	Loc
Windows Defender Antiviru...	Helps prote...	Running	Automatic	Loc
Windows Defender Firewall	Windows D...	Running	Automatic	Loc

Figure 3 Locating the VPixx Device Server

Troubleshooting on Windows

After Windows has loaded, the VPixx Device Server should start automatically and while running, you should always be able to access your devices.

If you cannot access your devices, or the devices are not behaving as they should, you might need to restart the server. This can be completed by going to the Services window, right-clicking the VPixx Device Server which allows you to start, stop or restart the server.



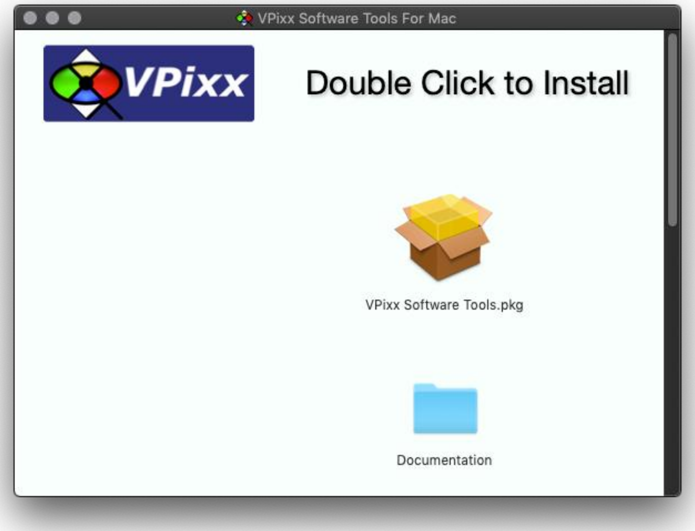
VPixx Device Server		Running	Automatic	Loc
WalletService	Hosts ob			Loc
WarpJITSvc	Provides		Trig...	Loc
Web Account Manager	This serv			Loc
WebClient	Enables \		Trig...	Loc
Wi-Fi Direct Services Conne...	Manages		Trig...	Loc
Windows Audio	Manages		ic	Loc
Windows Audio Endpoint B...	Manages		ic	Loc
Windows Backup	Provides			Loc
Windows Biometric Service	The Winc		Trig...	Loc
Windows Camera Frame Se...	Enables r		Trig...	Loc
Windows Connect Now - C...	WCNCSV			Loc
Windows Connection Mana...	Makes au		ic (T...	Loc

Figure 4 Right clicking on VPixx Device Server

New Installation Package for MAC computers

VPixx Software Tools now comes packaged as a .dmg for OS X which allows you to install our application directly in the app folder (VPutil and PyPixx) and it will transfer our files automatically to the appropriate folder. The installation process is simple.

1- Mount the DMG by double clicking on the VPixx Software Tools for Mac icon
2- Double click the VPixx Software Tools.pkg



VPixx Software Tools For Mac

Double Click to Install

FIGURE 5 VPIXX SOFTWARE TOOLS.PKG

You will be guided towards the next steps. If you want to move the Documentation files to a different folder, you can do so now.

The installer will always copy the files to **/Library/Application Support/VPixx Technologies/**

When this installation happens, one of the scripts will install the server. **The server is installed as a “LaunchDaemon”, an application which runs in the background automatically.**

Once installed, the server should automatically start whenever you restart your computer.

In a future release, the Server’s status will be controlled by PyPixx. In the meantime, it can be controlled via the ‘launchd’ command line tool.

Troubleshooting on Mac

If you cannot access your device, or the device is not behaving as it should, you might need to restart the server.

You can get a list of all the currently running LaunchDaemon with: `sudo launchctl list`

To start the server: `sudo launchctl start com.vpixx.deviceserver`

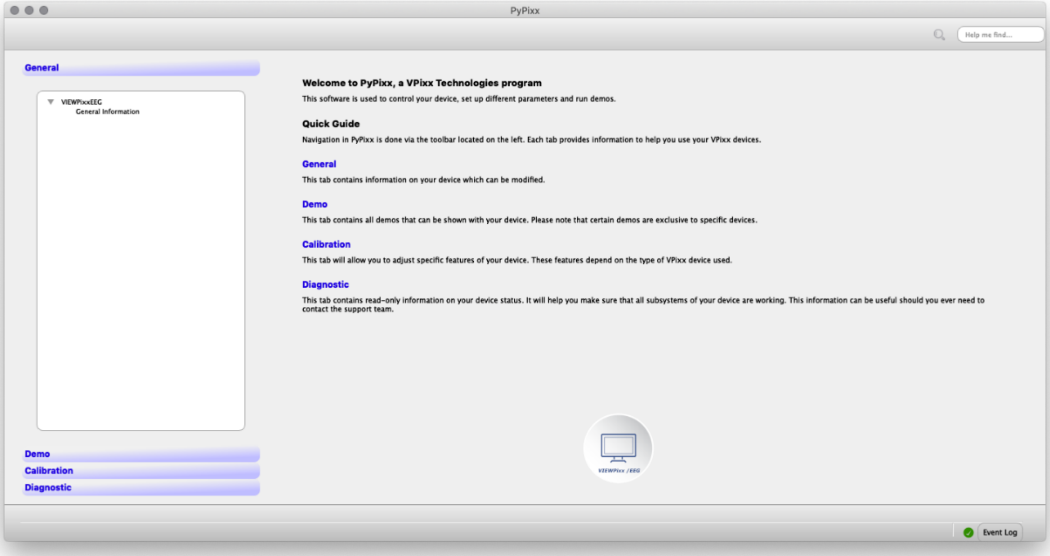
To stop the server: `sudo launchctl stop com.vpixx.deviceserver`

To restart the server, simply stop it then start it again.

PyPixx On Mac

PyPixx, the graphical user interface, can now be used on Mac OS X. For more information on PyPixx, see the complete *Application Guide for VPixx Products*.

When the installation is completed, you can find PyPixx in your Application folder. You can simply start PyPixx from that folder.



Welcome to PyPixx, a VPixx Technologies program

This software is used to control your device, set up different parameters and run demos.

Quick Guide

Navigation in PyPixx is done via the toolbar located on the left. Each tab provides information to help you use your VPixx devices.

General

This tab contains information on your device which can be modified.

Demo

This tab contains all demos that can be shown with your device. Please note that certain demos are exclusive to specific devices.

Calibration

This tab will allow you to adjust specific features of your device. These features depend on the type of VPixx device used.

Diagnostic

This tab contains read-only information on your device status. It will help you make sure that all subsystems of your device are working. This information can be useful should you ever need to contact the support team.

FIGURE 6 PYPIXX GENERAL WINDOW (MAC)

New Installation Package for Linux computers

The VPixx Software Tools on Linux recently changed from a simple file archive to a complete installation package (.deb). When this installation occurs, one of the scripts will install the server. This can be installed with a simple command:

```
sudo dkpg -i VPixx_Software_Tools.deb
```

This will install all the required dependencies, the newest firmware, the newest MATLAB mex file, the server as well as our PyPixx and VPutil tools.

The VPixx files can be found in /usr/share/VPixx Software Tools

The server is installed as a Service, an application which runs automatically and is managed by SystemD.

Once installed, the server should always be started whenever you restart your computer.

In a future release, the Server's status will be controlled by PyPixx. In the meantime, it can be controlled via the 'launchd' command line tool.

Troubleshooting on Linux

If you cannot access your device, or the device is not behaving as it should, you might need to restart the server.

This is done very easily with a simple command line: `sudo systemctl [start/stop/restart] vpixx-device-server`. Simply pick which operation you wish to complete.

If you encounter a problem and would like to get in touch with VPixx, you can retrieve the Server's log by running the command: `sudo journalctl -u vpixx-device-server`. This will generate the file which we can later use to determine the problem's nature.

PyPixx On Linux

The PyPixx graphical user interface can now be used on Linux. For more information on PyPixx, see the complete ***Application Guide for VPixx Products***.

PyPixx can easily be started using the *PyPixx* command in a terminal.

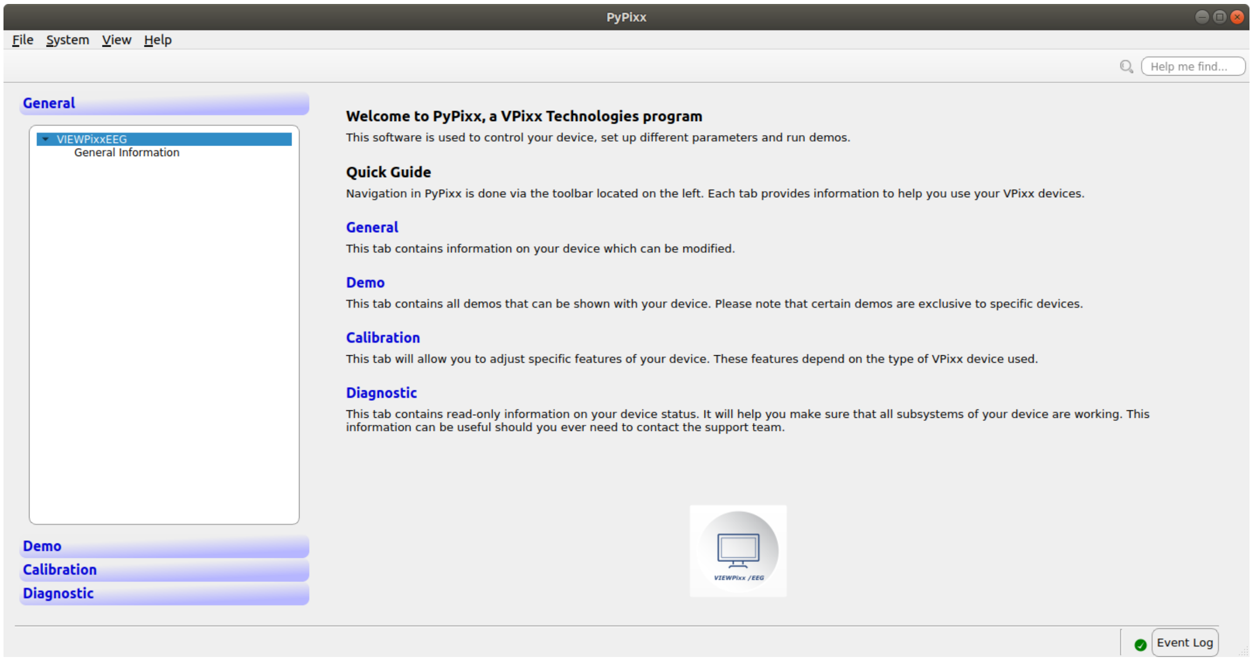


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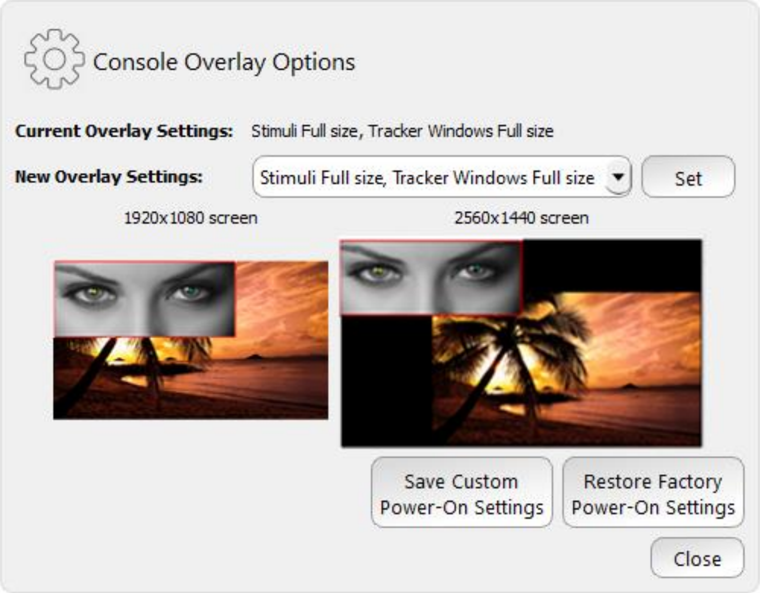
Figure 7 PyPixx General window (Linux)

Console Option Widget for DATAPixx3 and TRACKPixx3

This feature is for a setup using a DATAPixx3 and a TRACKPixx3 only and is only possible on the LCD monitor connected in display port output 2 of the DATAPixx3.

The Console Overlay Options widget can be accessed from the general toolbox under Datapixx3. It can be used to preview and set the overlay settings for the tracker window and the stimuli.



Current Overlay Settings: Stimuli Full size, Tracker Windows Full size

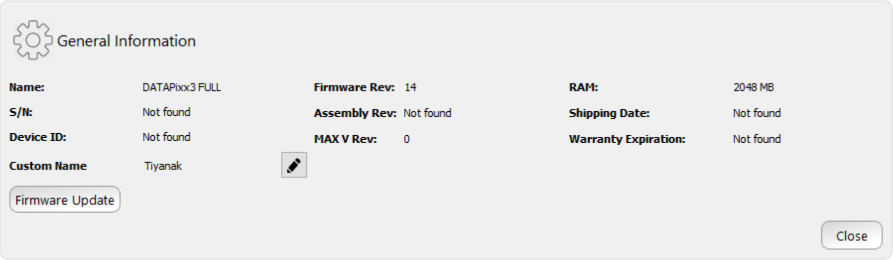
New Overlay Settings: Stimuli Full size, Tracker Windows Full size

FIGURE 8 CONSOLE OVERLAYS WIDGET

Once you have selected your setting, it is possible to save it to the device such that it is the default option when the device is powered-on. This can be done with the buttons located at the bottom of the UI.

General Information Widget Restructure

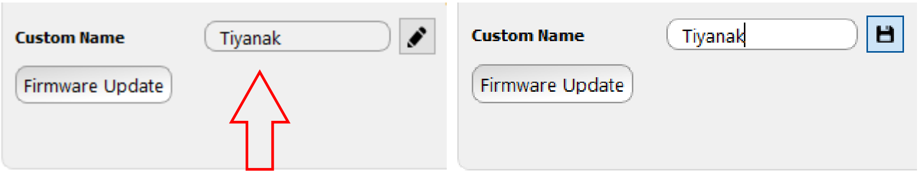
The General Information window has been updated. This includes general information such as firmware and serial number which can be useful to identify the device.



Name:	DATAPixx3 FULL	**Firmware Rev:**	14	**RAM:**	2048 MB
S/N:	Not found	**Assembly Rev:**	Not found	**Shipping Date:**	Not found
Device ID:	Not found	**MAX V Rev:**	0	**Warranty Expiration:**	Not found
Custom Name	Tiyanak				

FIGURE 9 THE NEW COMPACT GUI FOR THE GENERAL INFORMATION WINDOW

This UI simply lists information on the device and allows it to be renamed. This can be useful if you have multiple devices or if the devices are moved often. Simply click the pencil icon to edit the name of the device. This is saved directly on the device and it is kept when the device is restarted. To remove the name of the device, simply leave the box empty.



Custom Name: Tiyanak

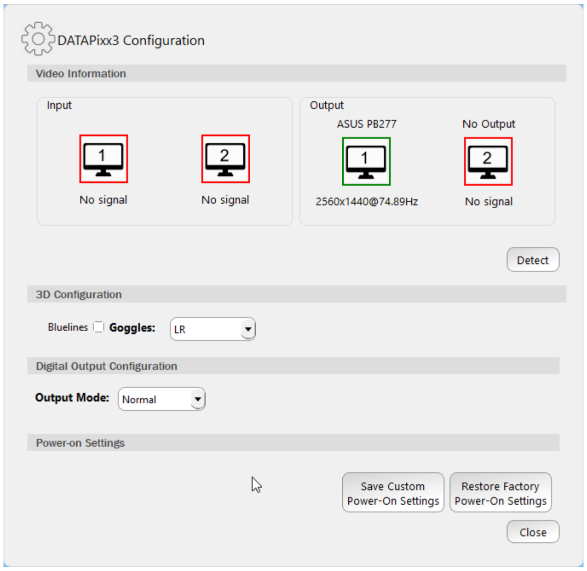
Custom Name: Tiyanak

FIGURE 10 CUSTOM NAME FEATURE

Configuration Widget

Some of the configuration options have been moved from the General Information to the specific Configuration Widget. This configuration widget will be different depending on what devices you have.

Datapixx3 Configuration Widget



DATAPixx3 Configuration

Video Information

Input: 1 No signal; 2 No signal

Output: ASUS PB277 1 2560x1440@74.89Hz; No Output 2 No signal

3D Configuration

Bluelines □ Goggles: LR

Digital Output Configuration

Output Mode: Normal

Power-on Settings

Detect
Save Custom Power-On Settings
Restore Factory Power-On Settings
Close

FIGURE 11 ANALOG OUT OPTIONS

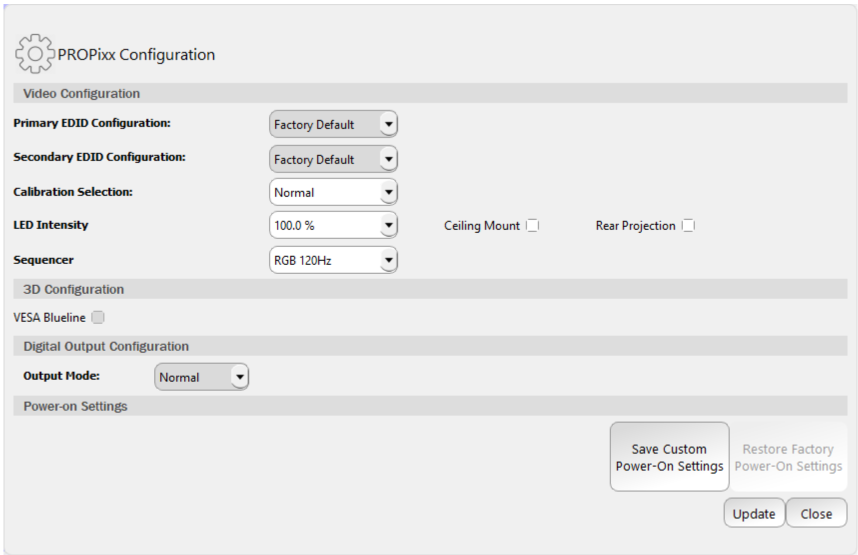
The DATAPixx3 Configuration widget will show you information on the connected screen and allow you to set up the 3D glasses and the digital output mode. You can save these settings using the buttons at the bottom of the screen.

PROPixx Configuration Widget

In this new widget, you are now able to select options that previously required VPutil:

- Calibration
  - If you have a custom calibration, you can select it here
- LED Intensity
  - If the PROPixx is too bright for your usage, you can select a different LED intensity which retains the perfect D65 white point calibration.
- Sequencer

- You can select the sequencer the PROPixx uses to generate its image. This can be useful to test a static 1440 Hz or 480 Hz image.



PROPixx Configuration

Video Configuration

Primary EDID Configuration: Factory Default

Secondary EDID Configuration: Factory Default

Calibration Selection: Normal

LED Intensity 100.0 % Ceiling Mount □ Rear Projection □

Sequencer RGB 120Hz

3D Configuration

VESA Blueline □

Digital Output Configuration

Output Mode: Normal

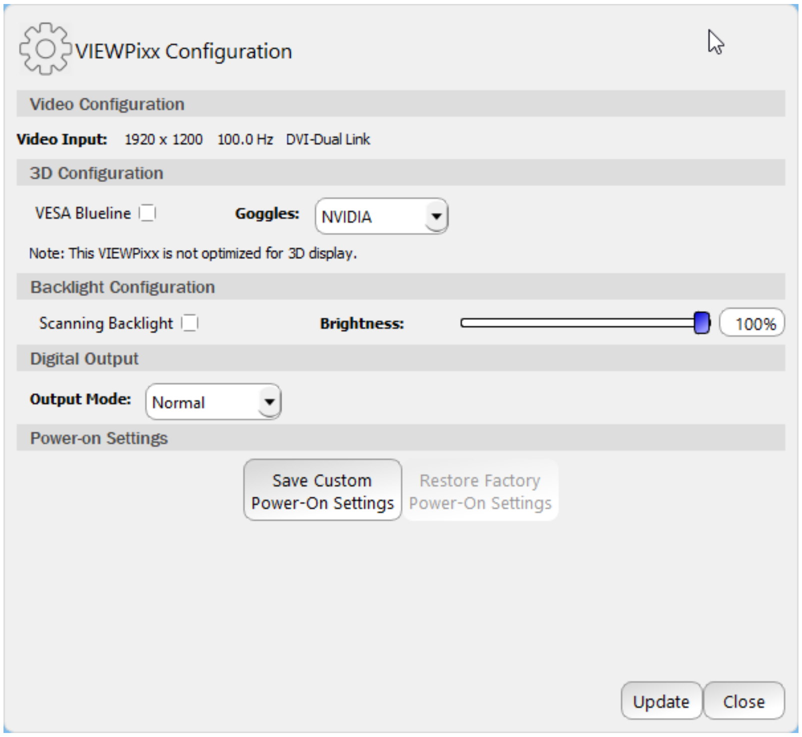
Power-on Settings

Save Custom Power-On Settings
Restore Factory Power-On Settings
Update
Close

FIGURE 12 PROPIXX CONFIGURATION WIDGET

VIEWPixx Configuration Widget

In this widget you can control the scanning backlight of the VIEWPixx and VIEWPixx /3D.



VIEWPixx Configuration

Video Configuration

Video Input: 1920 x 1200 100.0 Hz DVI-Dual Link

3D Configuration

VESA Blueline □ Goggles: NVIDIA

Note: This VIEWPixx is not optimized for 3D display.

Backlight Configuration

Scanning Backlight □ Brightness: 100%

Digital Output

Output Mode: Normal

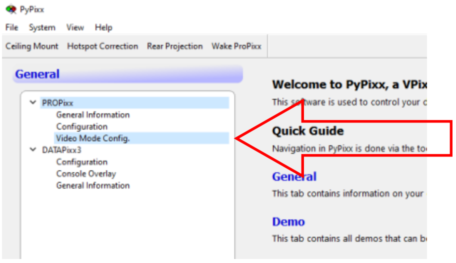
Power-on Settings

Save Custom Power-On Settings
Restore Factory Power-On Settings
Update
Close

FIGURE 13 VIEWPIXX CONFIGURATION WIDGET

Video Mode Widget

There is now a widget which allows you to select your video mode. This new widget can be found in the General tab.



Welcome to PyPixx, a VPix

This software is used to control your c

Quick Guide

Navigation in PyPixx is done via the to

General

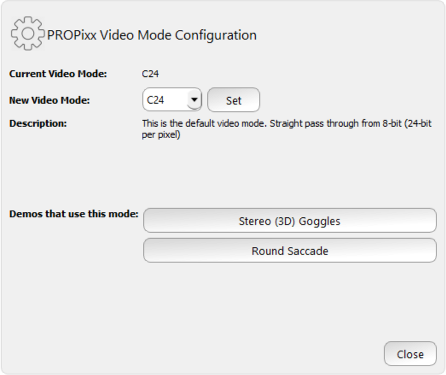
This tab contains information on your

Demo

This tab contains all demos that can b

FIGURE 14 ACCESSING THE VIDEO MODE CONFIG WIDGET

The new widget lets the user select the video mode, provides a description of the mode for new users, and also provides links to guide users to demos that feature this mode.



Current Video Mode: C24

New Video Mode: C24

Description: This is the default video mode. Straight pass through from 8-bit (24-bit per pixel)

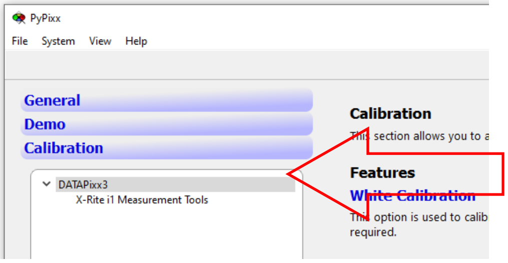
Demos that use this mode:

FIGURE 15 VIDEO MODE CONFIG WIDGET

This widget is currently only available for the PROPixx and will be added to other devices in the next release.

I1 and I1D Measurement Tools

A new widget to use X-Rite devices in conjunction with VPixx devices has been added to PyPixx. It is accessible via the calibration toolbox:



Calibration

This section allows you to a

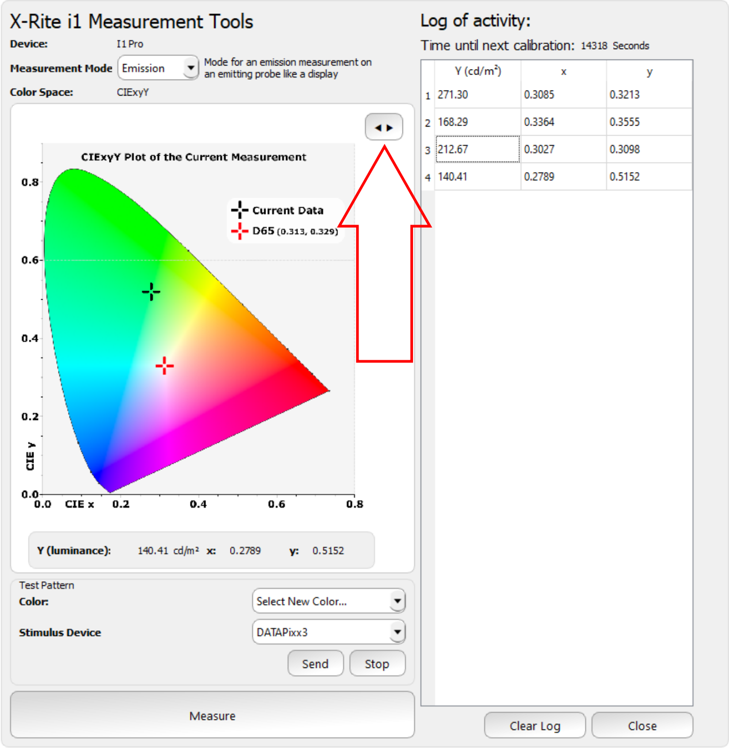
Features

White Calibration

This option is used to calib required.

FIGURE 16: ACCESSING I1 TOOLSET

Depending on the X-Rite device, you can set relevant settings as well as visualize and store recorded data (as a spectrum graph or as a position in a CIExyY graph):



X-Rite i1 Measurement Tools

Device: I1 Pro

Measurement Mode Emission — Mode for an emission measurement on an emitting probe like a display

Color Space: CIExyY

Y (luminance): 140.41 cd/m² **x:** 0.2789 **y:** 0.5152

Test Pattern

Color: Select New Color...

Stimulus Device DATAPixx3

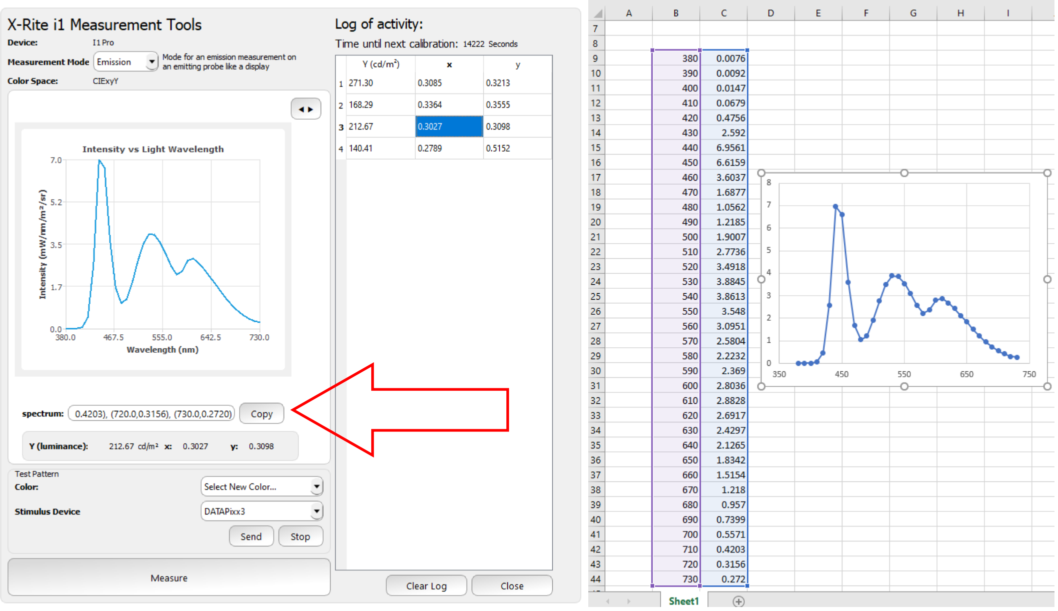
Log of activity:

Time until next calibration: 14318 Seconds

	Y (cd/m²)	x	y
1	271.30	0.3085	0.3213
2	168.29	0.3364	0.3555
3	212.67	0.3027	0.3098
4	140.41	0.2789	0.5152

FIGURE 17 DEFAULT UI FOR THE NEW I1 TOOLSET WHEN USED WITH AN I1-PRO DEVICE. ARROW FEATURING BUTTON USED TO TOGGLE BETWEEN THE SPECTRUM AND CHROMATICITY CHART VIEWS

The 'copy' feature allows users to easily copy the spectrum data for use in their preferred analysis program:



X-Rite i1 Measurement Tools

Device: I1 Pro

Measurement Mode Emission — Mode for an emission measurement on an emitting probe like a display

Color Space: CIExyY

spectrum: 0.4203), (720.0,0.3156), (730.0,0.2720) Copy

Y (luminance): 212.67 cd/m² **x:** 0.3027 **y:** 0.3098

Test Pattern

Color: Select New Color...

Stimulus Device DATAPixx3

Log of activity:

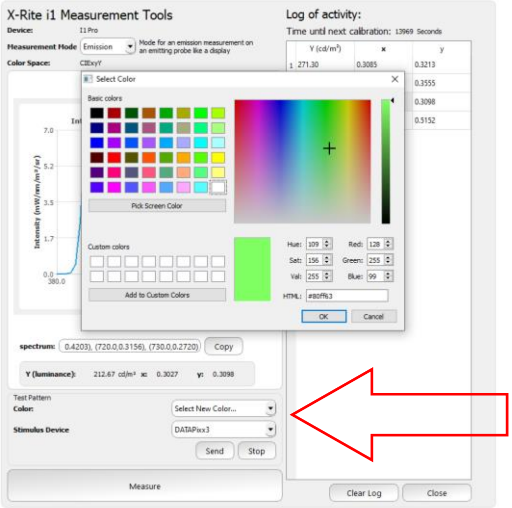
Time until next calibration: 14222 Seconds

	Y (cd/m²)	x	y
1	271.30	0.3085	0.3213
2	168.29	0.3364	0.3555
3	212.67	0.3027	0.3098
4	140.41	0.2789	0.5152

	A	B	C
7			
8			
9		380	0.0076
10		390	0.0092
11		400	0.0147
12		410	0.0679
13		420	0.4756
14		430	2.592
15		440	6.9561
16		450	6.6159
17		460	3.6037
18		470	1.6877
19		480	1.0562
20		490	1.2185
21		500	1.9007
22		510	2.7736
23		520	3.4918
24		530	3.8845
25		540	3.8613
26		550	3.548
27		560	3.0951
28		570	2.5804
29		580	2.2232
30		590	2.369
31		600	2.8036
32		610	2.8828
33		620	2.6917
34		630	2.4297
35		640	2.1265
36		650	1.8342
37		660	1.5154
38		670	1.218
39		680	0.957
40		690	0.7399
41		700	0.5571
42		710	0.4203
43		720	0.3156
44		730	0.272

FIGURE 18 LEFT: GUI WHEN LOOKING AT THE SPECTRUM OF THE SELECTED READING AND FEATURING THE 'COPY' BUTTON. RIGHT: COPIED DATA BEING PASTED AND PLOTTED AS-IS BY EXCEL WITH NO NEED FOR DATA MANIPULATION.

You can also have a specific color displayed by any of your VPixx devices when taking readings with your x-rite device.



Device: I1 Pro

Measurement Mode: Emission — Mode for an emission measurement on an emitting probe like a display

Color Space: CIExyY

Time until next calibration: 13969 Seconds

	Y (cd/m²)	x	y
1	271.30	0.3085	0.3213
			0.3555
			0.3098
			0.5152

Hue: 109 Sat: 156 Val: 255 Red: 128 Green: 255 Blue: 99

HTML: #80ff63

spectrum: 0.4203), (720.0,0.3156), (730.0,0.2720)

Y (luminance): 212.67 cd/m² x: 0.3027 y: 0.3098

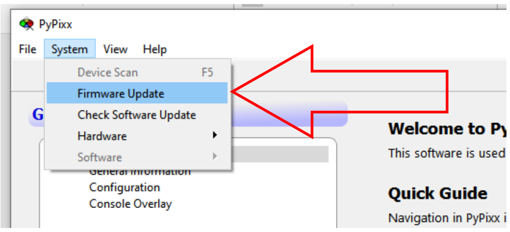
Color: Select New Color...

Stimulus Device: DATAPixx3

FIGURE 19 COLOR SELECTION POP UP FEATURING THE COMBO BOX USED TO ACCESS IT AND THE COMBO BOX TO SELECT WHICH DEVICE TO SEND THAT COLOR TO.

Firmware Update Widget

The firmware of the connected devices can now be updated with one button push in the new firmware update widget. It can be accessed from 'System' in the PyPixx menu bar.



Welcome to Py

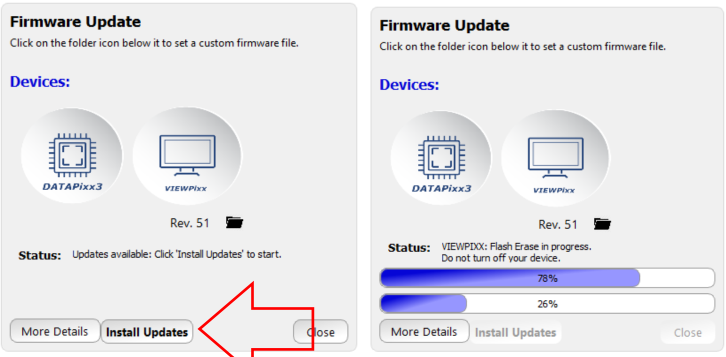
This software is used

Quick Guide

Navigation in PyPixx i

FIGURE 20 ACCESSING THE FIRMWARE UPDATE WIDGET

Regardless of how many devices you have connected, you can update all of your devices by simply clicking 'Install Updates'. The new UI will also visually inform users of the current progress in detail.



Click on the folder icon below it to set a custom firmware file.

Rev. 51

Status: Updates available: Click 'Install Updates' to start.

Click on the folder icon below it to set a custom firmware file.

Rev. 51

Status: VIEWPIXX: Flash Erase in progress. Do not turn off your device.

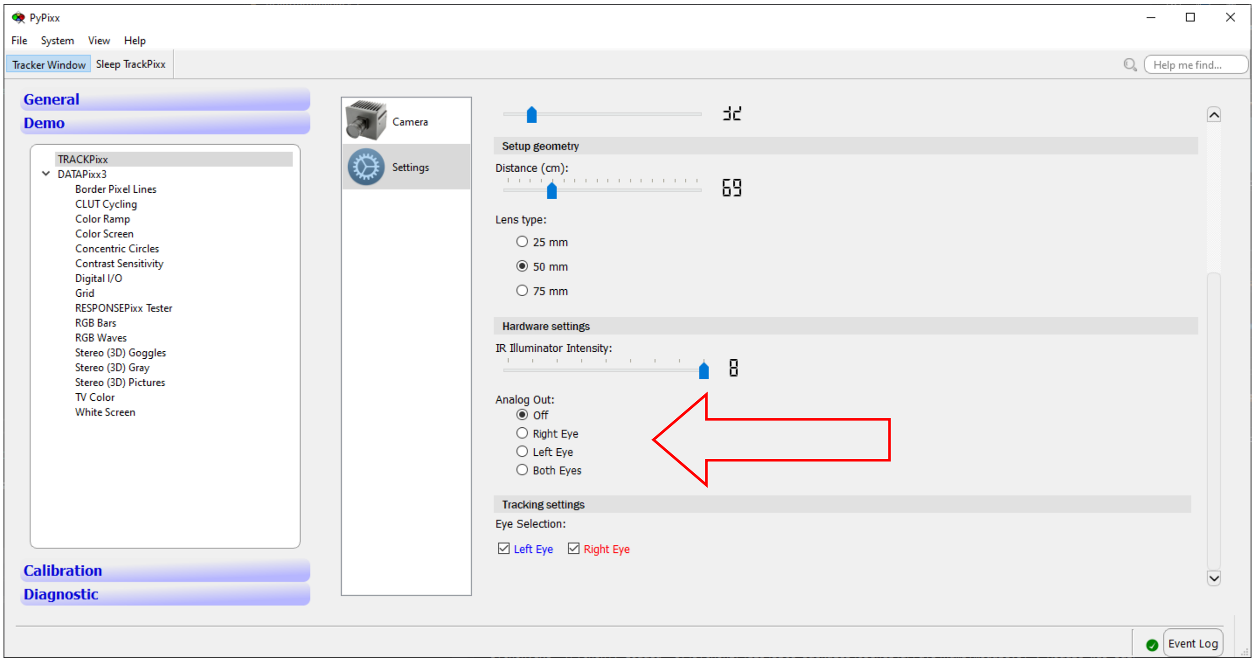
FIGURE 21 LEFT: GUI FOR THE NEW FIRMWARE UPDATE WIDGET. ARROW FEATURING THE BUTTON USED TO UPDATE THE FIRMWARE. RIGHT: GUI SHOWING THE FIRMWARE UPDATE PROGRESS

Pupil size on Analog Output

When you select the analog output for the TRACKPixx3 in the Settings widget, you can now select:

- Left Eye
- Right Eye
- Both

If you only select one eye, you will get X, Y and Pupil Diameter on ADC0, 1 and 2, respectively.



32

Setup geometry

Distance (cm): 69

Lens type:
○ 25 mm
● 50 mm
○ 75 mm

Hardware settings

IR Illuminator Intensity: 8

Analog Out:
● Off
○ Right Eye
○ Left Eye
○ Both Eyes

Tracking settings

Eye Selection:
☑ Left Eye ☑ Right Eye

FIGURE 22 ANALOG OUT OPTIONS

The Pupil size is in pixels (camera space pixels) and the values of pixel size 0 to 100 are mapped from 0 V to 10 V.

New Eye Tracking Data Available on the TRACKPixx3 Schedule

The formatting of the data has changed and you should update your code to match the new format! Once you update the DATAPixx3's firmware to revision 14, you will be using the new format.

The new format is as follows:

Timetag, Left Eye X, Left Eye Y, Left Pupil Diameter, Right Eye X, Right Eye Y, Right Pupil Diameter, Digital Input Values (24 bits), Left Blink Detection, Right Blink Detection, Digital Output Values (24 bits), Left Eye Fixation Flag, Right Eye Fixation Flag, Left Eye Saccade Flag, Right Eye Saccade Flag, Message code, Left Eye Raw X, Left Eye Raw Y, Right Eye Raw X, Right Eye Raw Y.

Here is a detailed explanation of each field:

Name of Field	Description
Timetag	The time on the DATAPixx3 when the data sample was generated
Eye X, Y	The screen position of the gaze for this frame. This considers the middle of the screen to be (0,0)
Pupil Diameter	The size of the pupil in pixels
Digital Input Values	The value of the digital input (24 bits)
Digital Output Values	The value of the digital output (24 bits)
Fixation Flag	1 if subject is fixating, 0 otherwise*.
Saccade Flag	1 if subject is doing a saccade, 0 otherwise*.
Message Code	A number to send messages to the device. Currently, this is only a number, at a later time it will be possible to insert messages.
Eye Raw X, Y	The values of the raw vectors between the pupil center and the cornea reflection used in the calculation of the screen position.

* See the Fixation and Saccade section for more details.

Saccade and fixation detection (online)

Our current design of the saccade and detection algorithms have been implemented directly in the hardware. To allow us to have online saccade and fixation detection, we have decided to use a total of 9 samples to detect them.

The velocity is calculated using 4 past frames and 4 future frames of the current eye position. This allows us to remove any possible error to the eye tracking experiment coming from external factors, such as camera noise.

Using the calculated velocity (which is the vector created from the speed in both X and Y direction), we compare it to certain thresholds for saccade and fixation and if the value is under or above that threshold for a large enough number of consecutive samples, we declare that a fixation or saccade is occurring.

This is currently done using units of pixels per seconds for the velocity. In the near future, this will be switched to degrees of visual angle per seconds, which is a much more accurate method for the measuring of stimuli in vision research.

The currently used thresholds are as follows:

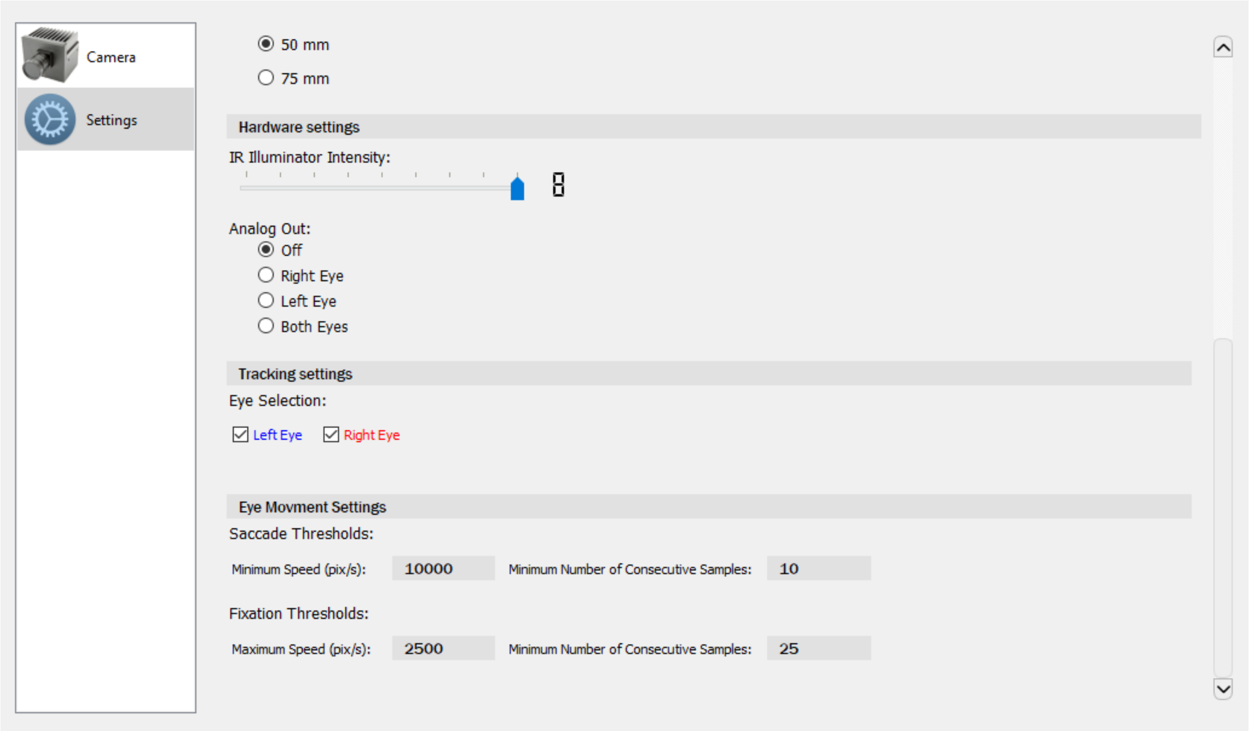
1. For a sample to be flagged as a **fixation**, the velocity of the eye movement must be under 2500 pixels per second for 25 consecutive samples.

2. For a sample to be flagged as a **saccade**, the velocity of the eye movement must be over 10 000 pixels per second for 10 consecutive samples.

These values can be changed in PyPixx and MATLAB.

PyPixx

Navigate to the Demo tab and select the TRACKPixx. This will allow you to select the *Settings* widget, as shown below. At the bottom of the page, you are able to set the threshold for the fixation and saccades.



● 50 mm
○ 75 mm

Hardware settings

IR Illuminator Intensity: 8

Analog Out:
● Off
○ Right Eye
○ Left Eye
○ Both Eyes

Tracking settings

Eye Selection:
☑ Left Eye ☑ Right Eye

Eye Movment Settings

Saccade Thresholds:
Minimum Speed (pix/s): 10000 Minimum Number of Consecutive Samples: 10

Fixation Thresholds:
Maximum Speed (pix/s): 2500 Minimum Number of Consecutive Samples: 25

FIGURE 23 TRACKPIXX SETTINGS

MATLAB

There are four new functions available to set thresholds and know if a subject is fixating or doing a saccade.

[leftFixationFlag, rightFixationFlag] = Datapixx('IsSubjectFixating');

[leftSaccadeFlag, rightSaccadeFlag] = Datapixx('IsSubjectMakingSaccade');

Datapixx('SetFixationThresholds' [, maxSpeed=2500] [, minNumberOfConsecutiveSamples=25]);

Datapixx('SetSaccadeThresholds' [, minSpeed=10000] [, minNumberOfConsecutiveSamples=10]);

With this corresponding documentation:

>> Datapixx('IsSubjectFixating?')

Usage:

[leftFixationFlag, rightFixationFlag] = Datapixx('IsSubjectFixating');

Returns 1 if the subject is currently fixating, 0 otherwise.
The TRACKPixx3's schedule must be running.
This requires firmware 14 in the DATAPixx3 and 16 in the TRACKPixx3.

>> Datapixx('IsSubjectMakingSaccade?')

Usage:

[leftSaccadeFlag, rightSaccadeFlag] = Datapixx('IsSubjectMakingSaccade');

Returns 1 if the subject is currently making a saccade, 0 otherwise.
The TRACKPixx3's schedule must be running.
This requires firmware 14 in the DATAPixx3 and 16 in the TRACKPixx3.

>> Datapixx('SetFixationThresholds?')

Usage:

Datapixx('SetFixationThresholds' [, maxSpeed=2500] [, minNumberOfConsecutiveSamples=25]);

Set the fixation thresholds for the TRACKPixx schedule.
The maximum speed is in pixels per seconds and the number of samples is at 2KHz.
This requires firmware 14 in the DATAPixx3 and 16 in the TRACKPixx3.

>> Datapixx('SetSaccadeThresholds?')

Usage:

Datapixx('SetSaccadeThresholds' [, minSpeed=10000] [, minNumberOfConsecutiveSamples=10]);

Set the saccade thresholds for the TRACKPixx schedule.
The minimum speed is in pixels per seconds and the number of samples is at 2KHz.
This requires firmware 14 in the DATAPixx3 and 16 in the TRACKPixx3.