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the Netherlands

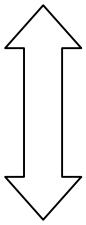
DE WIJS
THE ART OF VIEWING

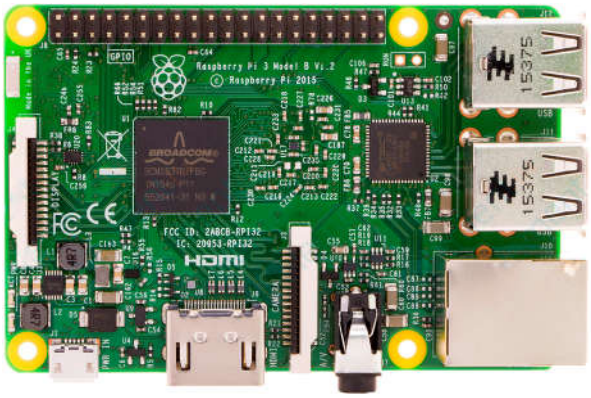
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User manual for:

Raspberry pi configuration Cinema version for the Digital 3D viewer 15-04-D50-x







December, 2017, version 1.0

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1. Introduction

This document describes the behaviour of the 'cinema' configuration of the Raspberry pi media player as a source for the 3D digital viewer 15-04-D50-x. De Wijs provides a pre- configured SD card with Linux Raspbian operating system installed to be inserted in the Raspberry pi. Besides that, the open source application Pipresents is installed as well. Additional software of de Wijs added the cinema function to the existing Pipresents.

Installed versions: Raspbian Jessie 2016
Pipresents 1.3 gapless

Although Pipresents is able to present more complicated shows. This document focuses to cinema function only.

1.1 Acknowledgements

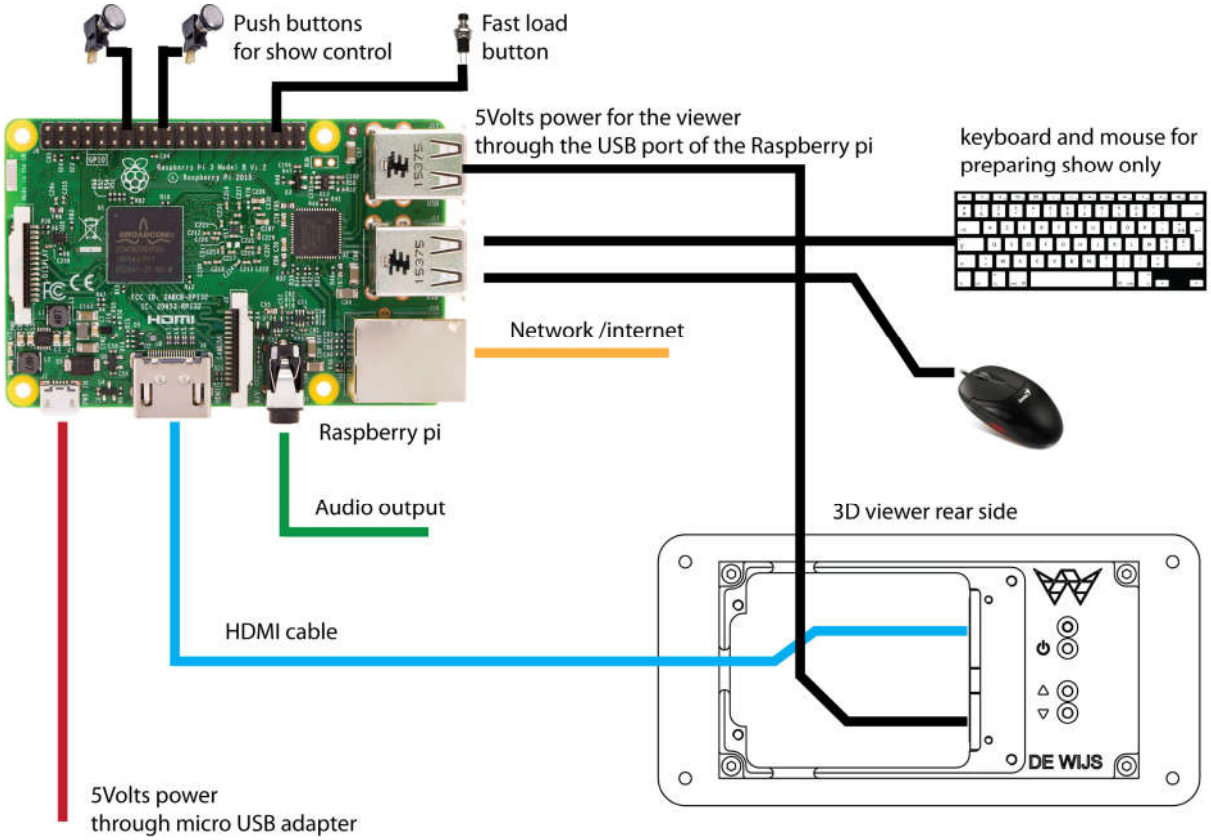
Ken Thompson for creating the open source presentation tool Pi-presents.
http://pipresents.wordpress.com
The Raspberry pi foundation for creating such a small and very useful source for the viewer: http://www.raspberrypi.org

1.2 Default configuration.

By default the SD card provided with your set, holds the operating system Raspbian Jessie, Pipresents 1.3 Gapless and the de Wijs software for making the cinema function. It is, by default, set to control the 3D digital viewer 15-04-D50-x, not a desktop monitor, although that can be changed.

Pipresents is, with the first start-up, configured with an empty show. The only way to load a new set of trailers is to press the small ‘load button’ on the Raspberry pi housing. In chapter 2, the preparation of the trailers and the selection panel is described.

The shows progress can be controlled by keyboard or the push buttons.
In Pipresents, a show profile ‘3dviewer’ is made.
When booting / restarting the Raspberry pi, it automatically starts the ‘3dviewer’ profile show. When loading a new set of trailers, using the fast load button, this 3dviewer profile is adapted or overwritten to the new situation.
By default, all the screensaver functions are turned off.



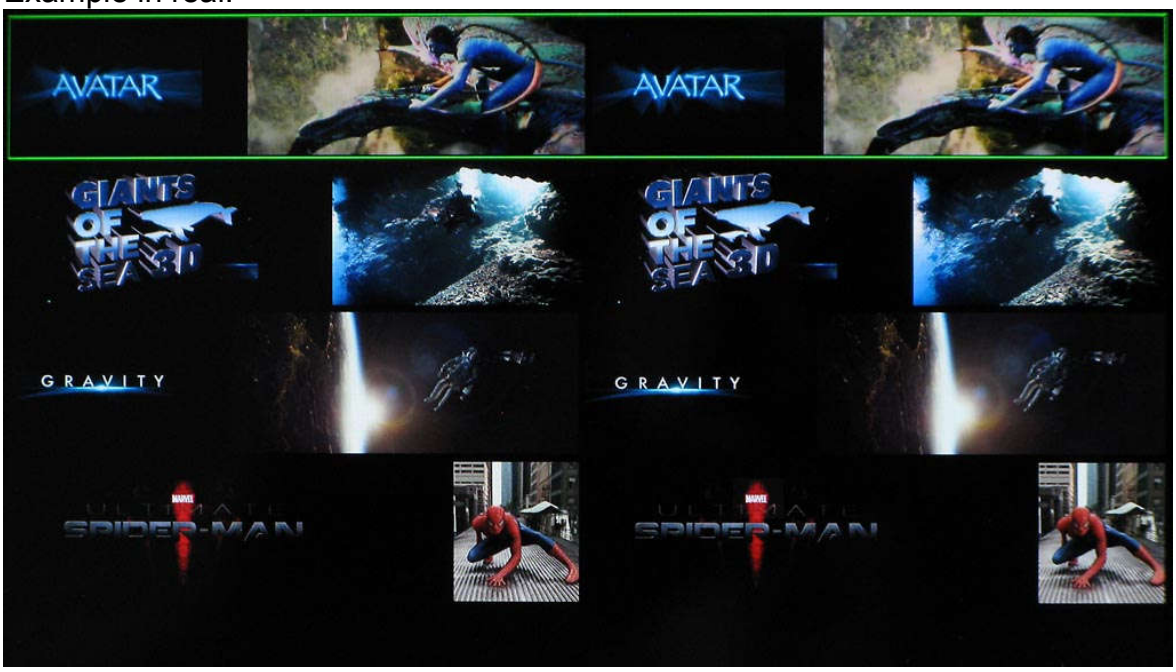
FAQ: are push buttons able to wake the Raspberry up, out of the screensaver when it is enabled; NO. The push buttons do not act like a keyboard or mouse. The display would stay off.

2. Preparing a show

In the grid bellow is the visitors selection panel illustrated. This ‘cinema’ version is able to show 4 trailers. Each Trailer (bar) thumbnail is actually an image, JPG file having the size of 1900 x 235 pixels.

Left eye	Right eye
Trailer 1	Trailer 1
Trailer 2	Trailer 2
Trailer 3	Trailer 3
Trailer 4	Trailer 4
Bottom banner	Bottom banner

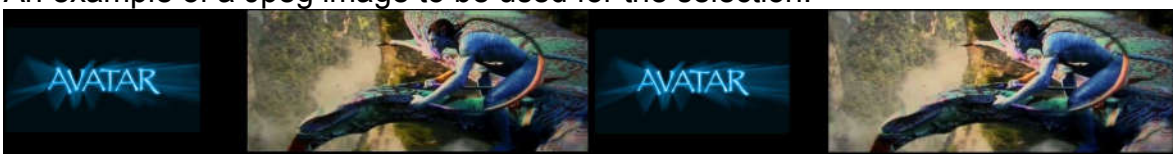
Example in real:



2.1 Preparing the graphical content

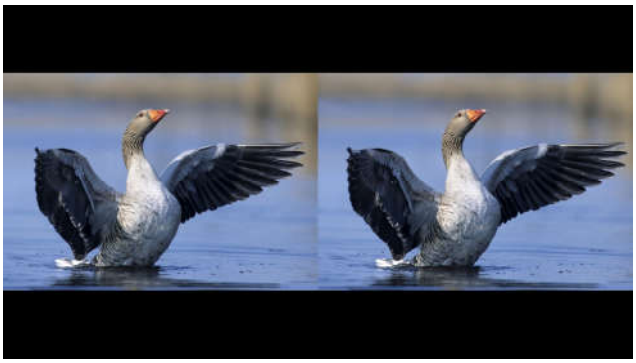
First the content and trailer selection image bars need to be prepared.

Thumbnails:
An example of a Jpeg image to be used for the selection:



So each side is 850x235 pixels.
For each trailer, a Jpeg image should be made with an unique name e.g. ‘trailer 1.jpg’
In total maximum 4 trailers can be shown.

Video:
The video has to be prepared in HD format. So the stereo pair has to be prepared side by side in one file with the dimensions of 1920x1080 pixels (horizontal x vertical).



Pipresents works with OMX player for video media. So all video formats supported by OMX player are fine to use with Pipresents such as; MP4, MKV, etc.
Common settings for preparing the video:
Target: MP4
Codec: h.264
Frames per second: 30

Background:
The 4 thumbnails are a layer over the background image. The Background measures 1920x1080 pixels in landscape orientation. This is a JPG image. When 4 trailers are configured, only a small bar at the bottom of the screen is visible. It can be filled with an add or other practical information.

Preparing the USB stick:
After you have prepared your thumbnails and video files, perform the next steps.

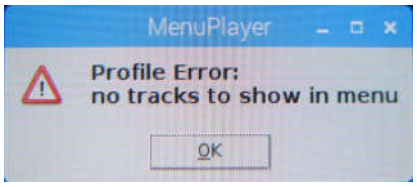
- Format the a USB drive to the FAT32 system first.
- Create directories in the root of the drive according to the following structure:

```
G:
└──Media_files
   │  Avatar.mp4
   │  Giants of the Sea.mp4
   │  Gravity.mp4
   │  Spiderman.mp4
   │
   ├──Background
   │    black.jpg
   │
   └──Thumbnails
        Avatar.jpg
        Gravity.jpg
        Spiderman.jpg
        Giants of the Sea.jpg
```

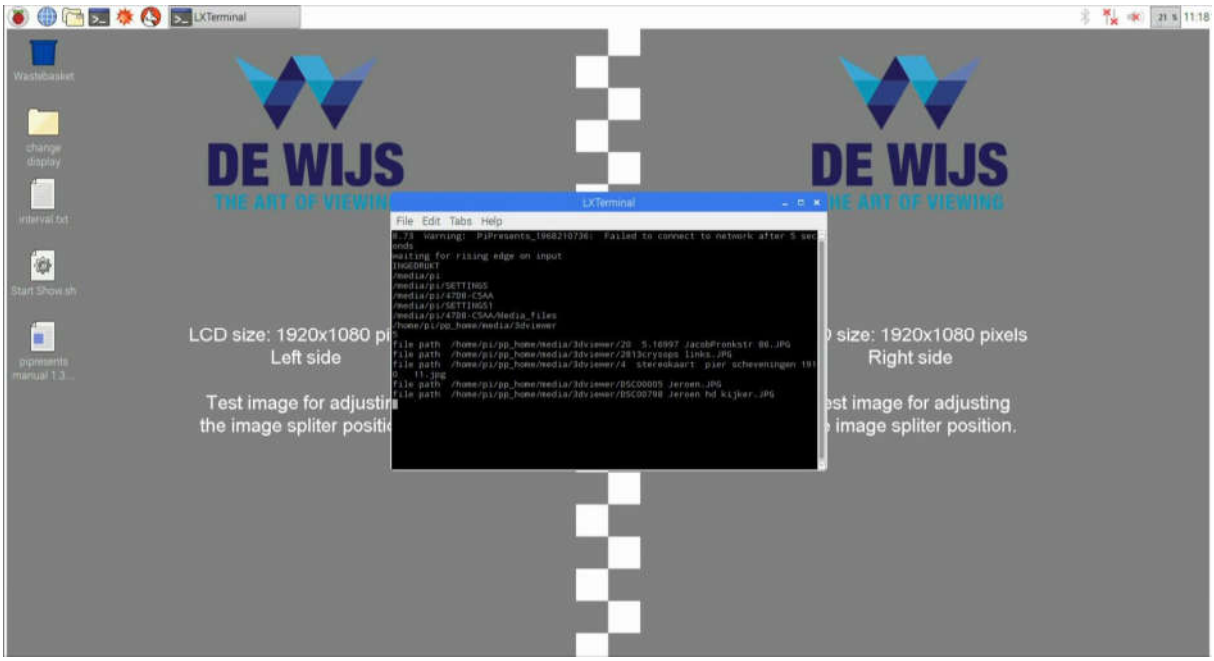
- For this cinema preview version, the names of the Media files as well as the Thumbnails should have equal names apart from the extension.
- Copy all your prepared files to designated directories. Check that you only copy true images or video files! Non image / video files will cause the show to stop or give errors. Images prepared on Apple devices might have hidden resource files in the same directory. Avoid to copy those to the USB drive!

2.2 Generate the menu on the Raspberry pi.

- Insert the USB drive in the Raspberry pi and turn it on.
- When this is the first time you turn the new Raspberry on, the show does not hold a previous show and gives an error:



- Attach a mouse to the Raspberry and click on the OK button.
- Press the ‘Load’ button. This will start the scan process of your images and videos and generation of the selection list in the Raspberry pi. Have some patience for this loading process.
- You should always leave the USB stick in the Raspberry. The images and videos are NOT copied to the internal micro SD card! They are played from this external USB stick.



The above image shows the moment the ‘load’ button is pressed and images are copied to the internal micro SD card.

After a while the load process is finished and the selection menu for the visitor should be visible. The Raspberry is ready for use now.

When the menu is not showing the things as you had in mind, check the USB stick on file names, location of files, size of images, etc. and repeat the above steps again.

Unless you know what you are doing, do **not** take the micro SD card out of the Raspberry pi and try to add images or videos using another computer. It can damage the operating system and the Raspberry pi might fail to start.

2.3 Adding / deleting images to the menu and content.

The easiest way to add or delete images the menu is to adapt the contents of the USB stick and press the load button. The Raspberry software will delete the ‘old’ menu and generates a new one with new links to the video streams.

3. Helpful procedures and additional modifications.

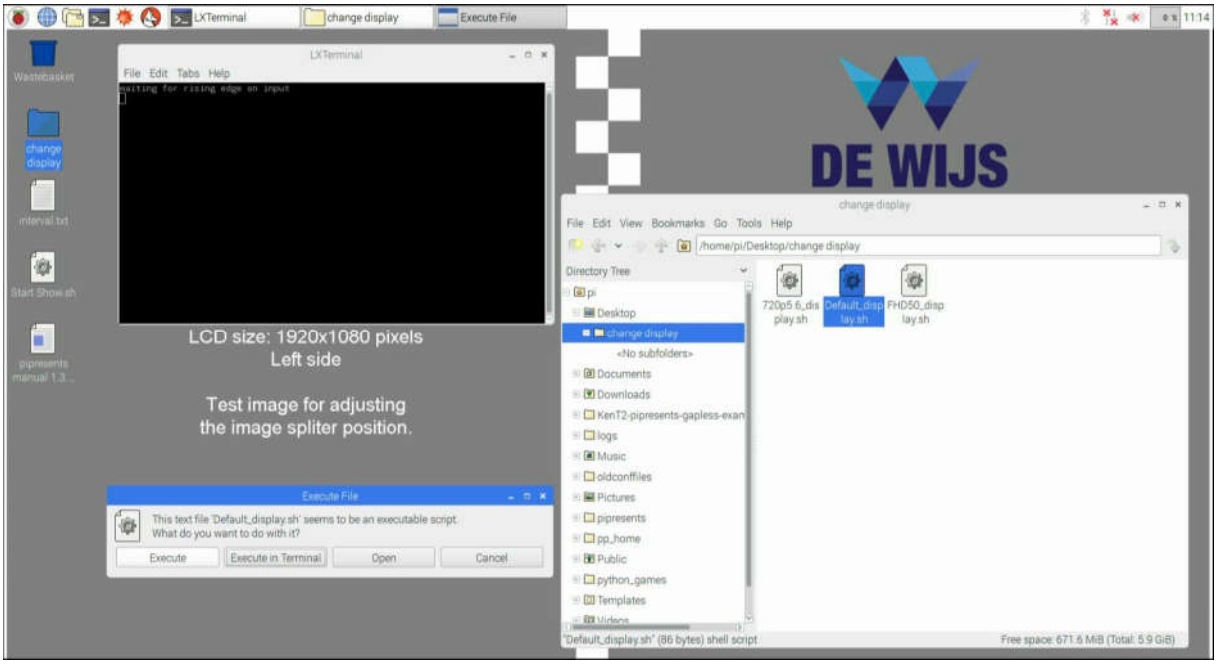
If there is for some reason the urgency to adapt the Raspberries configuration, outside the pre-configured software, then here are some helpful remarks.

3.1 Configuring the Raspberry pi for a normal desktop monitor.

Due to the special graphical configuration to control this Full HD 5” display inside the 3D viewer, a normal desktop monitor will not recognize the signals when the default Raspberry pi configuration is started.

Although it makes working / preparation of the show easier when the Raspberry pi is connected to a normal desktop monitor. For this reason, a small script is made to be executed that changes the graphical output of the Raspberry pi. Do as following;
This procedure is assumes to have an already running show on the Raspberry.

1. start up the Raspberry pi with the 3D viewer, USB keyboard, USB mouse connected.
2. Wait until the menu appears. Press Ctrl-Break (Pause) to quit the menu.
3. Look through the lenses and you see the Desktop environment. Double click ‘change display’
4. Three script files appear, it might take some time to appear. Double click ‘Default_display.sh’ A dialogue window pops up.
5. Press Execute.



6. The Dialogue disappears, seems like nothing happened. However the start-up of the Raspberries graphical output configuration has changed now. Perform a shut down now.
7. Unplug the HDMI of the 3D viewer and connect it to a normal desktop Monitor.
8. Start up the Raspberry pi and the normal desktop monitor should present everything the 3D viewer would show. Now you can prepare your show.

For turning back to the 3Dviewer graphical configuration, repeat all previous steps, now with the Desktop monitor connected first. At the point of selecting the script, double click FHD50_display.sh. for the 3D viewer.

3.2 Changing the behaviour of the show.

Pi Presents has a large amount of options and settings available to configure the show. For all details you can look to:
https://github.com/KenT2/pipresents-gapless/blob/master/manual.pdf

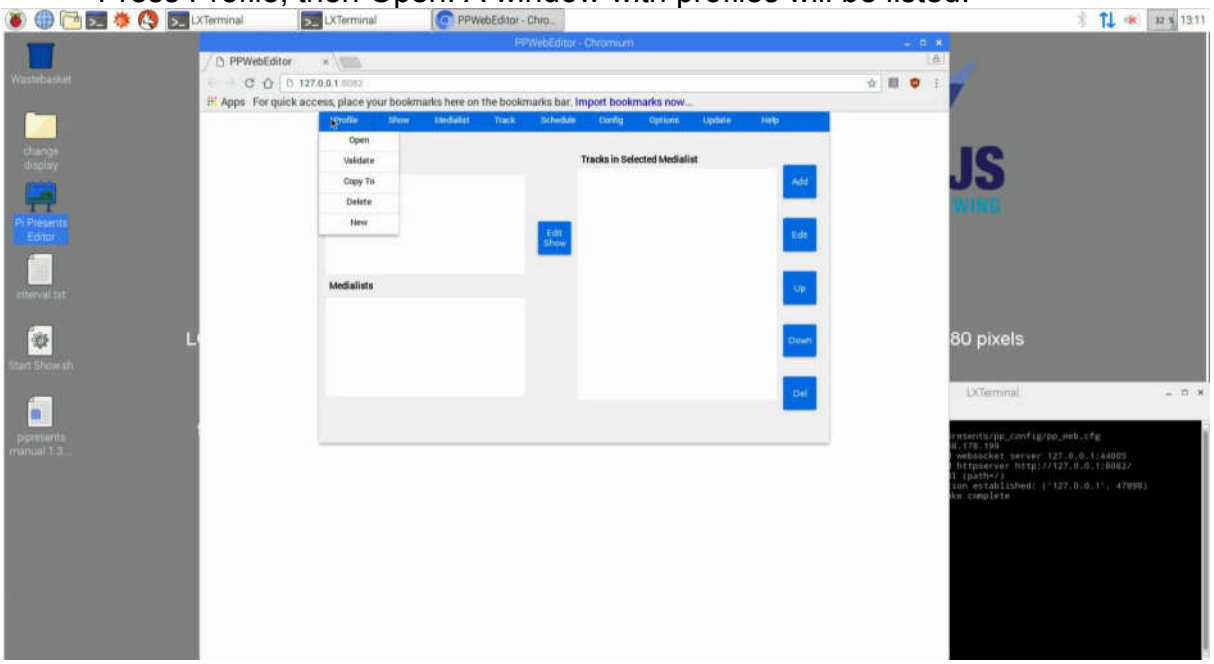
In this manual some very limited but often used settings are described.

How the cinema configuration works:
The cinema configuration is actually an automatic profile generator for the standard Pi-presents software package. The profile is stored in so called .json files which are based on text content. The cinema configuration generates a complete new profile when the 'load' button is pressed. It always stores this profile in the 3dviewer profile. When starting up the Raspberry pi, it automatically plays the 3dviewer profile, nothing else.

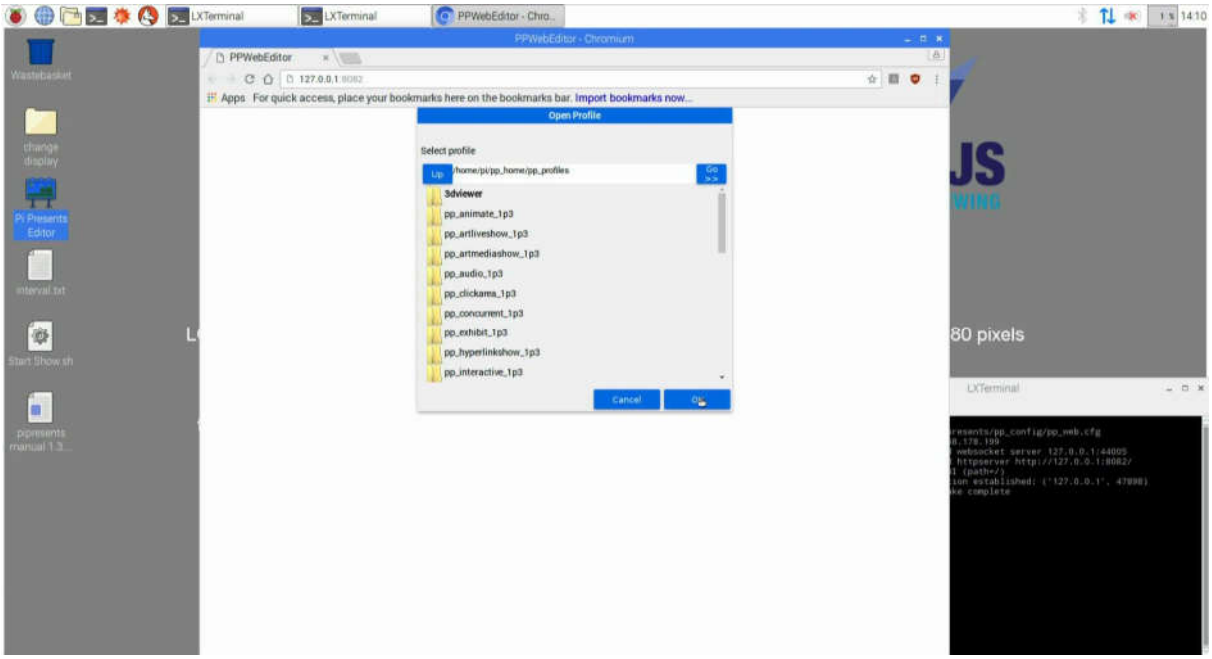
With pi-presents comes a pi-presents editor, also located on the desktop. With this editor you can change the behaviour or contents of the 3dviewer profile. But be aware that every time you press the load button, all changes are cleared and the cinema profile generator overwrites all settings in the 3dviewer profile!
To change pre-sets of the cinema profile generator is possible but not advisable. You should get in contact with de Wijs for more information on this.

If you want to adapt settings to the current profile (without pressing the load button anymore), perform the next steps:

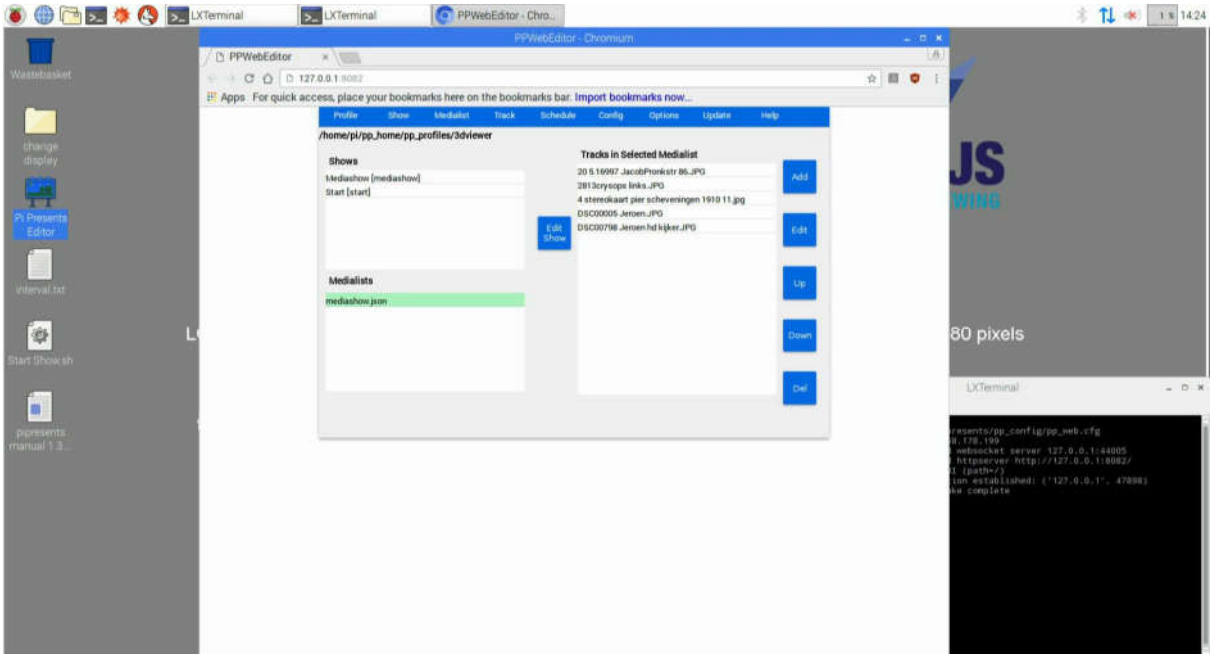
- Attach the Raspberry pi to the internet through Ethernet cable. (only needed for the use of the web-based configuration tool of pi-presents).
- Execute the shortcut on the desktop 'Pi presents editor',
- Press Profile, then Open. A window with profiles will be listed.



- Single press the first profile **3Dviewer** and select OK

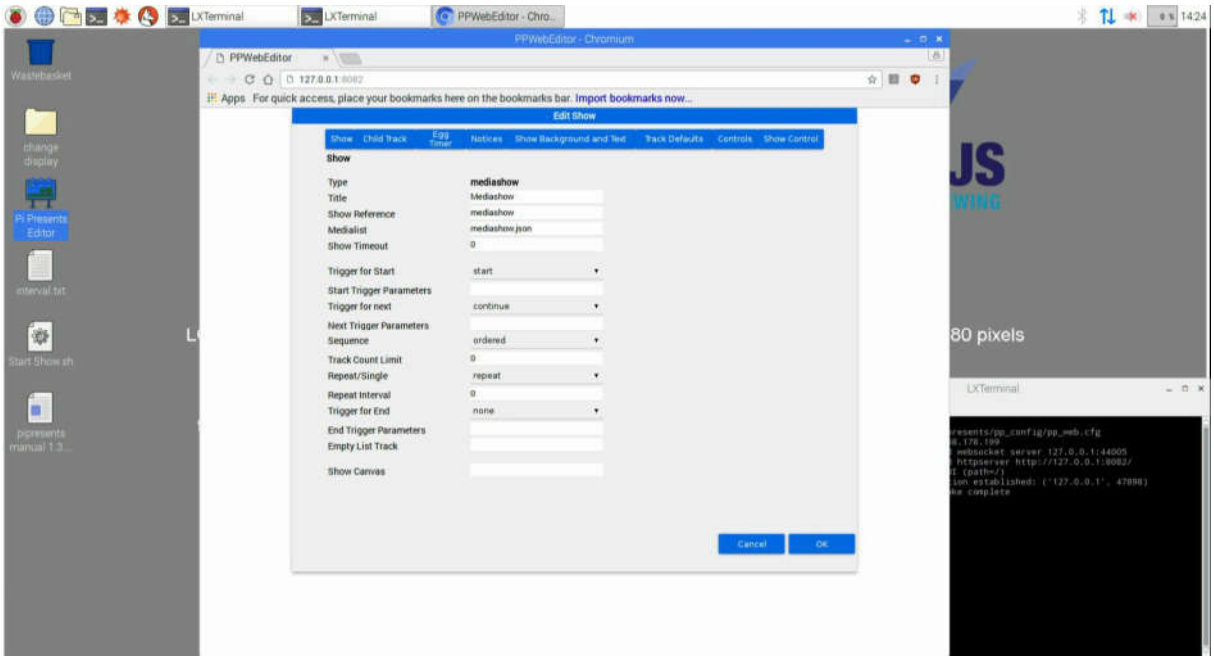


- Select mediashow.json, it will be light green highlighted and on the right images in this show are listed.



You can add, remove or edit the presentation settings of each image on the most right side of the window.

- To change the show settings select Mediashow in the upper left window, it will be light green highlighted. Then press Show in the upper bar and select Edit.



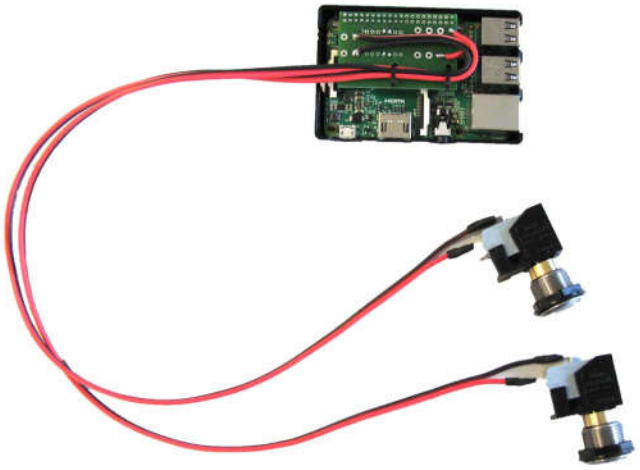
In the Edit Show window you are able to set show settings. Please refer to the manual of https://github.com/KenT2/pipresents-gapless/blob/master/manual.pdf to get informed about these settings and what they do.
Most common used is the tab Track Defaults. You can set for example the interval time of the slide advance.

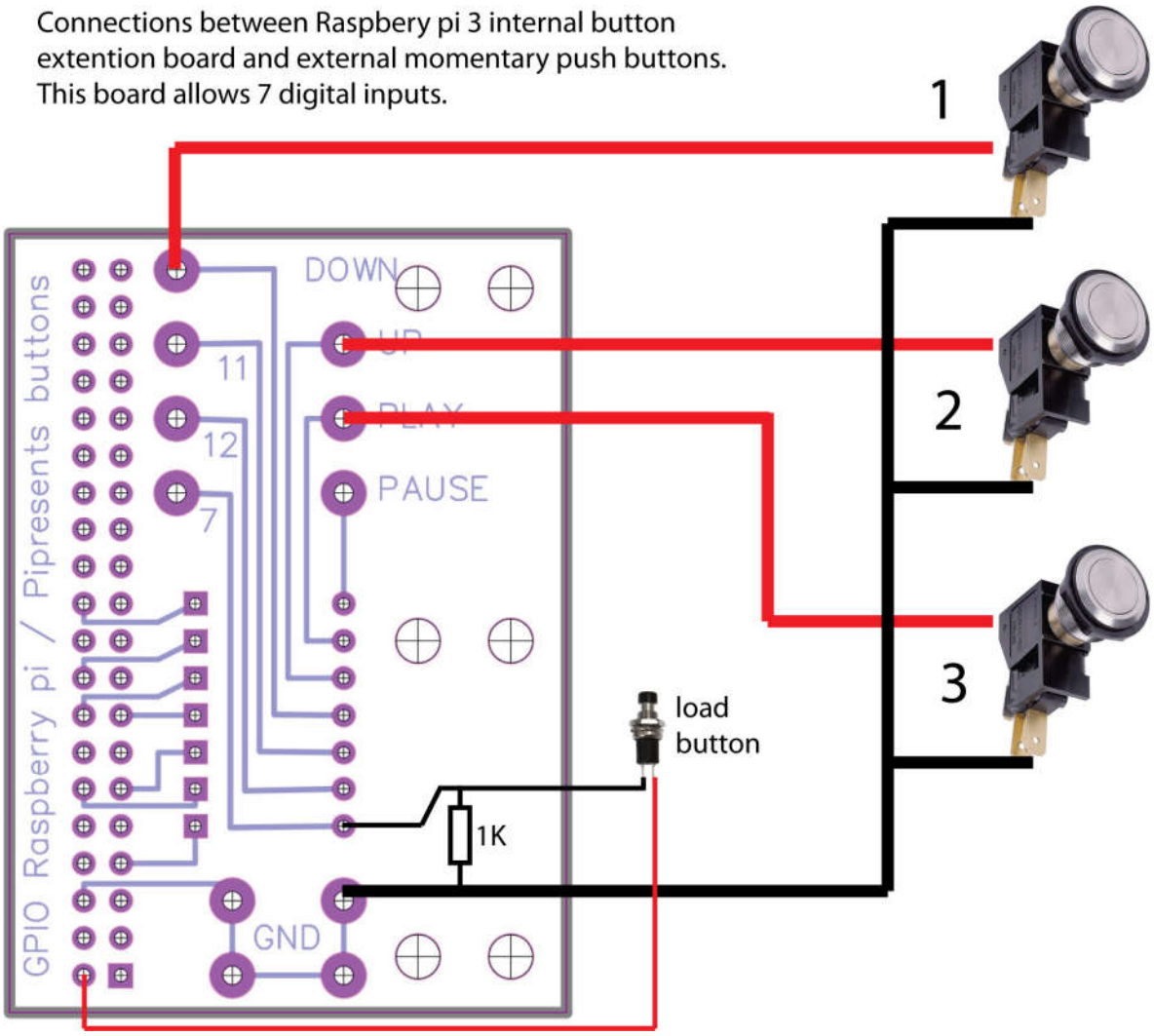
4. Technical specifications.

Specifications in this section only apply to the additional hardware of de Wijs for the Raspberry pi. Technical details regarding the Raspberry pi can be found on. https://www.raspberrypi.org/

To allow interactivity with the Raspberry pi and the visitor, the Raspberry has an on-board GPIO header which allows to connect push buttons. Pi-presents is able to capture presses on these buttons to trigger / start a show or advance a slide to the next one.

De Wijs made an extension board for this header to be able to connect these push buttons.





For the ‘fast load’ configuration, button 3 is not available.
Button 1: Select trailer; toggle through list.
Button 2: Return from video playing to trailer list.
Button 3: Play selected video.
Load button: When flash USB stick is inserted with images, images are loaded.