

# **JOY-IT**

## Arcade-GameStation



## Index

1.1	Introduction	3
1.2	Disclaimer	4
1.3	Security informations	4
2.	Start-up	5
3.1	Control	6
3.2	Navigating the different menus	8
3.3	RetroPie network-settings	11
3.4	RGB-LED Light-control	13
3.5	Arcade-Gamestation Boot/Shut down	14
4.1	Copying ROM-Files / installing games	15
4.2	Emulators	17
4.3	Emulator setup	18
5	Expert chapter	21
6	Assembly instructions	22
7	Service	43

## 1.1 Introduction

Dear customer,

thank you for purchasing our product. The Arcade-Gamestation is a multi-system emulator-station with integrated, original slot-machine joystick and arcade buttons.

The preinstalled RetroPie operating system contains emulators for different slot machines and also for gaming systems like Amiga, Atari, Commodore C64, Game Boy, SNES and many more.

With the Raspberry Pi 3 Gamestation, you are not only getting a pure gaming device, which gives you the possibility of empathize in old gaming times.

The development is dedicated to the Open Source idea.

The main parts of the Arcade-Gamestation are based on the known modular Linker-Kit-System, which offers a lot of sensors, relais, switches and many more. The used baseboard is giving the opportunity to the Raspberry Pi to process analog signals with an analog to digital converter.

So there are no limits for you or for your urge to explore. You can also use the parts of the Gamestation to measure and control and also use the high performance of the Raspberry Pi 3.

The Open Source idea is continued in the software: With basic programming skills you can modify the programming of the Arcade Gamestation according to your wishes. You have full access on the whole system at anytime and can make individual changes.

There are also no limits to the updates from the Raspberry Pi—community. Further developments in the future are possible. This instruction explains every single detail in how to assemble the Gamestation. This is easier than you might think. Nothing needs to be soldered or sawed and is suitable for teenagers or Raspberry Pi—beginners. The needed operating system is already preinstalled on the 16GB memory card. Also the process of installing is explained step by step.

The joystick and also the buttons matches arcade-quality and will survive the longest operations.

Another special highlight is the lightsystem. The multicolor LEDs are setting the acrylic case in a very stylish light and can be controlled individually. Different brightness, colors and lightsettings are easy to choose.

## 1.2 Disclaimer

The Joy-IT Arcade-Gamestation contains a microSD-Card with a software-package called RetroPie - this connects multiple emulators to a multifunctional gamestation-unit.

An emulator is a software-based system which allows you to emulate foreign hardware on another hardware-system.

The emulated system within this software is behaving like the original hardware but the components are created virtually and are calculated by the own computers hardware.

This allows you to emulate consols of old days on your domestic system.

The games are usually transfered by ROM-Files to the emulator.

ROM-Files are binary data copies which are extracted from the original hardware.

Therefore, to play the specific emulated game, you need the specific ROM-File.

Please note the following information:

The ownership, and also the usage, of ROM-Files is controled by the german copyright (§53).

Therefore you are only allowed to use, and own, the ROM-Files if you are in possession of the original medium.

Please consider that, if you don't want to read the data on your own, you are only allowed to download ROM-Files from the internet if you are the owner of the original games.

Otherwise we refer to license-free ROM-Files where the usage is allowed.

Therefore please follow the notes and instructions of the ROM-File-Sources.

**The user is responsible for following the licenses for the usaged software.**

**The text above only serves as information.**

## 1.3 Security informations



For legal reasons we would like to point out the following:

This product is, by the legal regulation, no toy and not suitable for kids (persons under 14 years).

The Gamestation is an example for the Raspberry Pi single-board-computer and the Linker-Kit system is a modular experimentation environment which is configurable for almost every use-case.

For those reasons, the bottom of the Gamestation is open.

This allows an easy access to its components and to modify the system by the owners wishes.

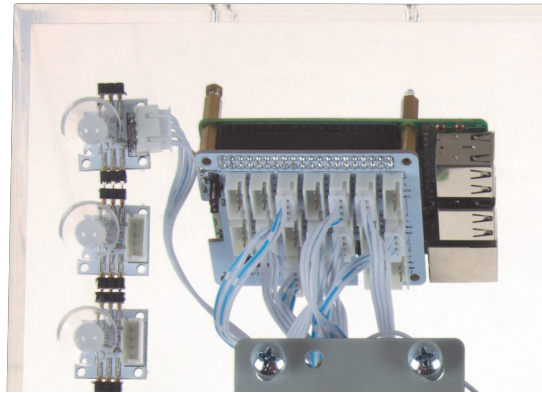
Kids may detach parts and swallow those which could lead to death.

Kids may also get hurt by contact blades, and screws.

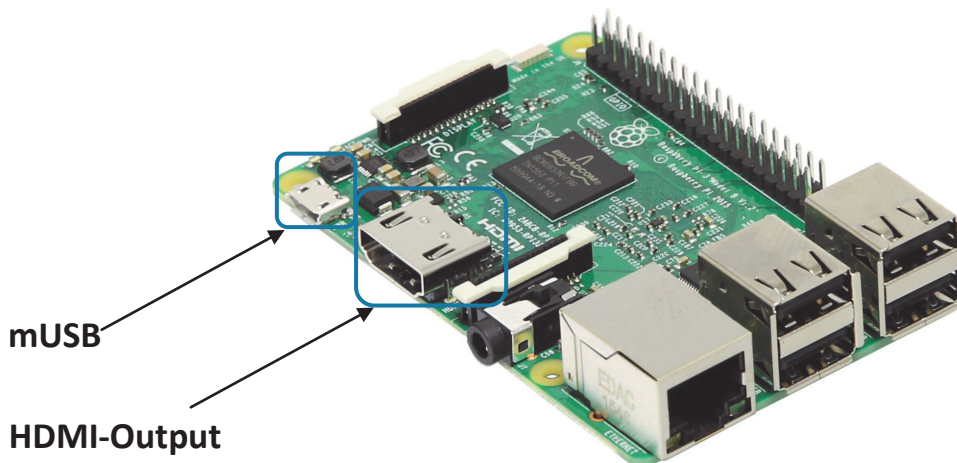


### 2. Start-up

The Joy-IT Arcade-Gamestation contains the Raspberry Pi 3 as a computer unit. This device is visible on the back-plate in the upper left.



To activate the Arcade-Gamestation, you have to connect the accompanied mUSB power-adapter and the HDMI-Cable on the marked connections.



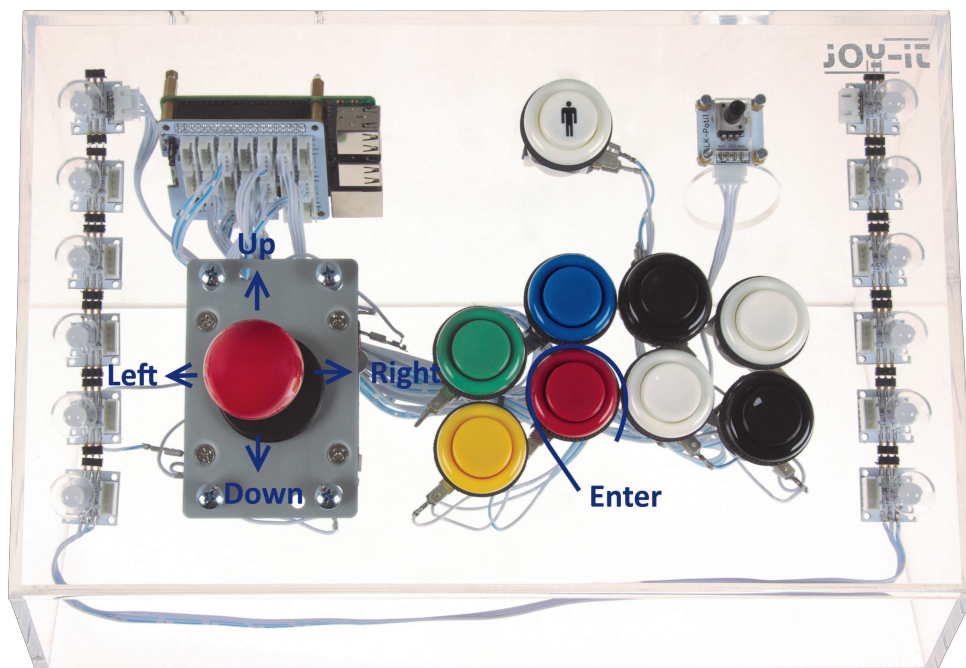
Connect the other side of the HDMI-Cable to a monitor or TV with a HDMI-Input. After connecting the power-adapter to the electric socket, the devices is starting automatically.

For cable lead-through, please find the opening on the backplate of the arcrylic wall.

How to boot or shut down the device is described in the part: Arcade-Gamestation Boot/Shut down [Page14]

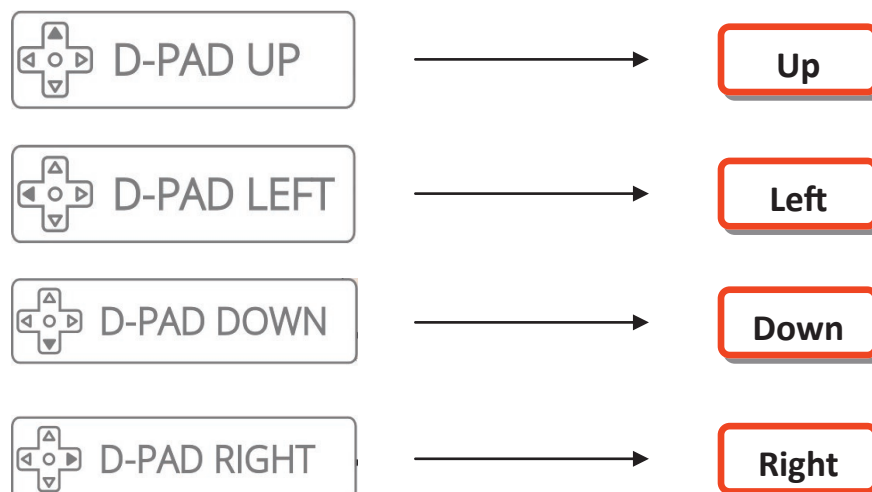
### 3.1 Control

The following image is showing the button assignment of the Joy-IT Arcade-Gamestation. Pressing the buttons is simulating a keyboard-input of the assigned button. (So the green button simulates the input-number 5). This is important when configuring the configuration of emulators and their button-assignments.

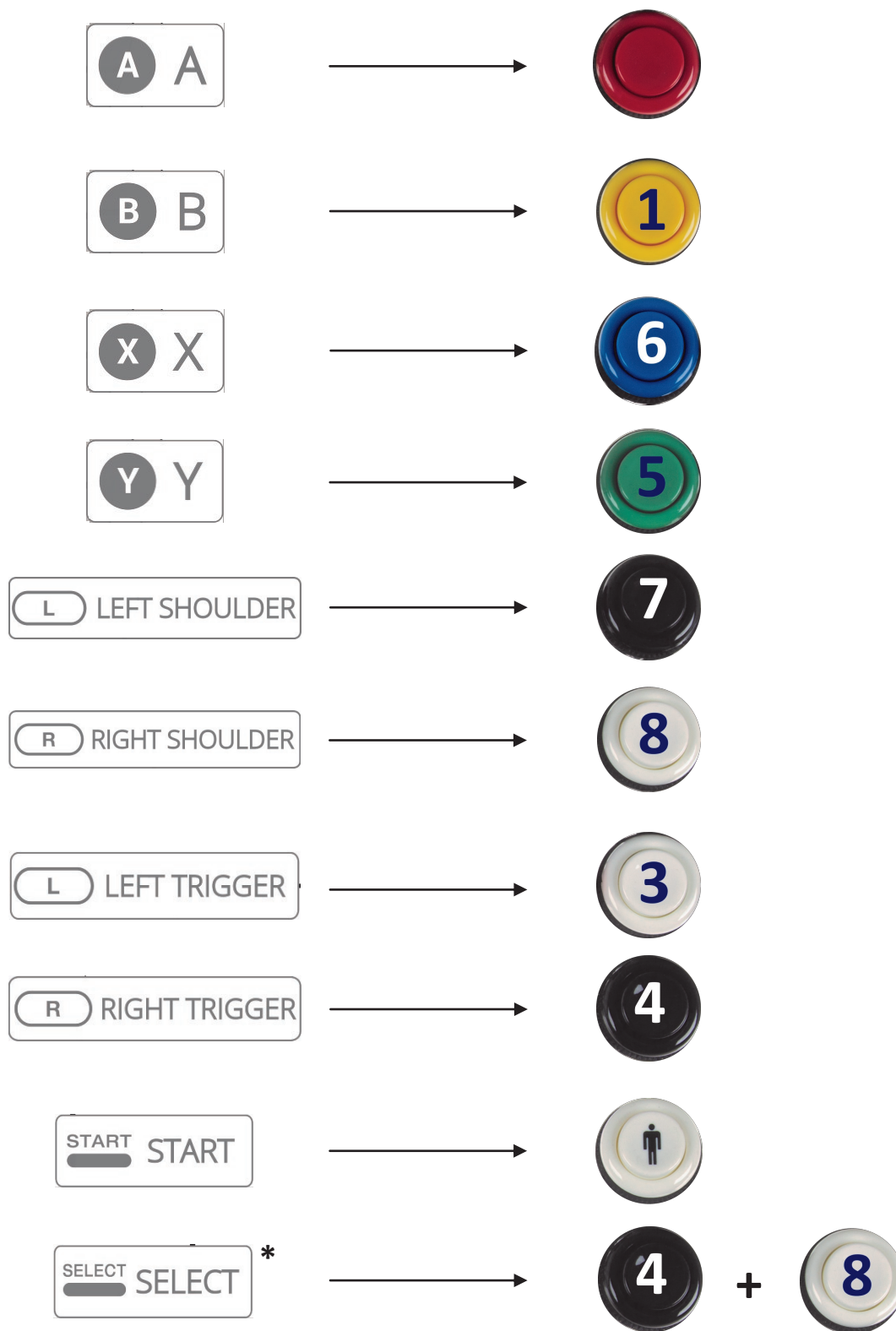


The RetroPie software has a preconfigured controller which is used by the most emulators. [You can recognize the emulators using this configurations on the „lr“-Mark in front of the emulators name— see „libretro“ in the RetroPie documentation for more informations]

Please note our preinstalled configuration:



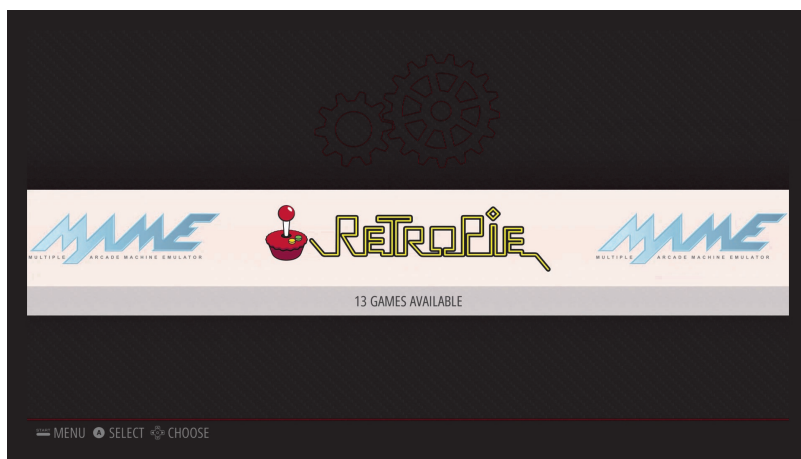
### 3.1 Control



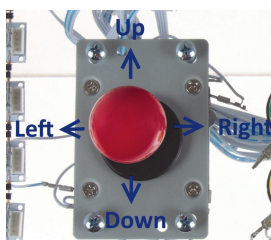
\*Some emulators are using this combination for more functions (e.g.: insert coin)

### 3.2 Navigating the different menus

The preinstalled RetroPie-system is intended to be controlled with a gamepad/joystick. Therefore it is very easy to use this with the build-in control of the Gamestation.



Please note the following button assignment for navigating through the menu:



**Navigation**



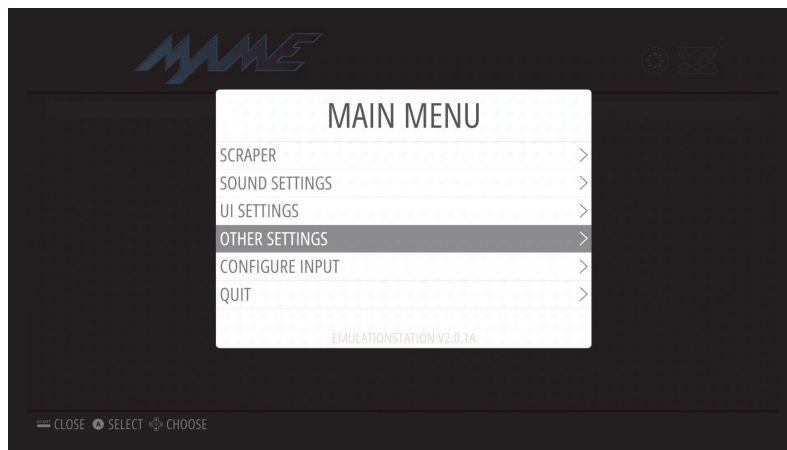
**Confirm**



**Cancel**

### 3.2 Navigating the different menus

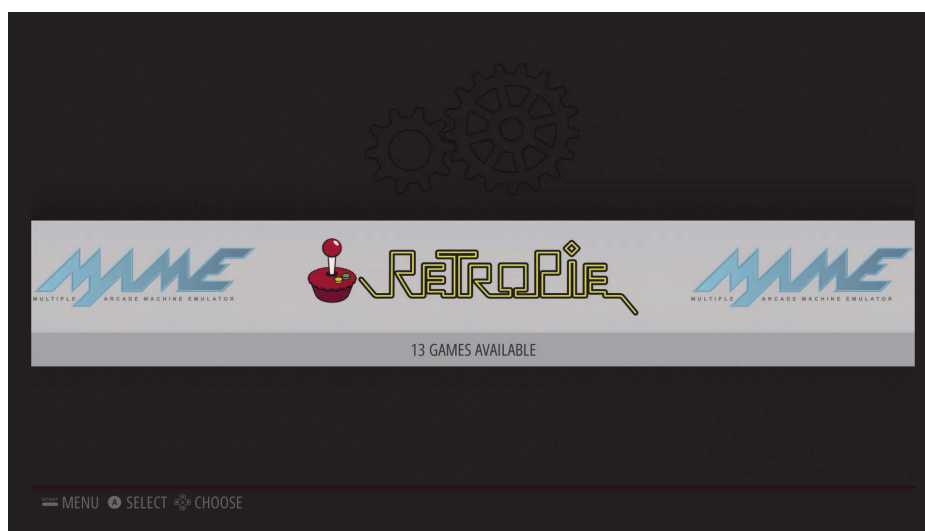
By pressing the „Start“-Button, you can access the RetroPies configuration menu.



Here you can control general settings, display settings and control settings.

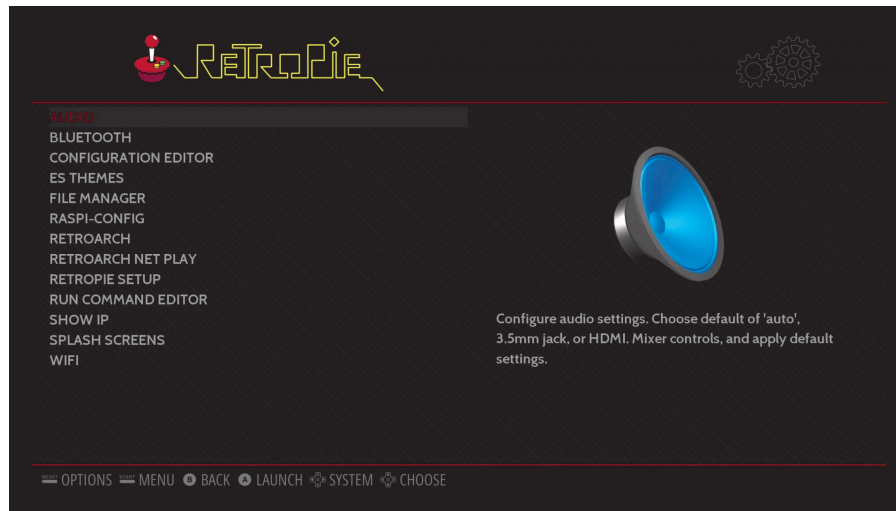
Depending on the transferred Roms (see: Copying ROM-Files / installing games), you can choose the desired system by pressing „left“ or „right“ and confirm your choice with the red button to open the game-list.

You will also find, besides the installed emulator-systems, „RetroPie“ in the main menu.

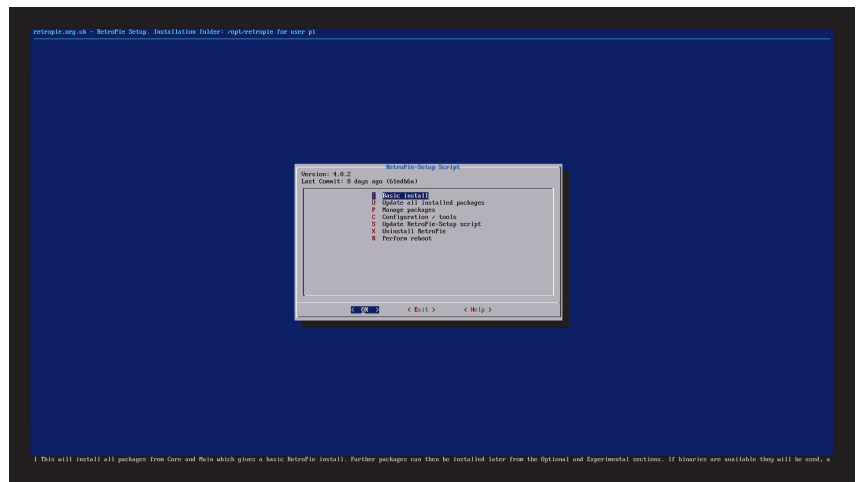


### 3.2 Navigating the different menus

Open the list with „confirm“. That's how you enter the RetroPie's setup where you can change the settings of periphery, audio, bluetooth, emulator-configuration and WiFi.



Some menu items and some emulator-configurations will lead you to a „command line—like“ interface.



You can still navigate with the joystick-control. The red button acts as „Enter-Button“ and the combination of both white buttons acts as „Escape-Button“ [Combination-> press both buttons simultaneous].

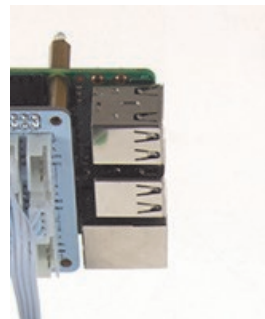




### 3.2 Navigating the different menus

Please note that it's also possible to connect a normal wired (or wireless) keyboard to the USB-ports of the Raspberry Pi to extend the available buttons.

But you won't need this for most of the games.

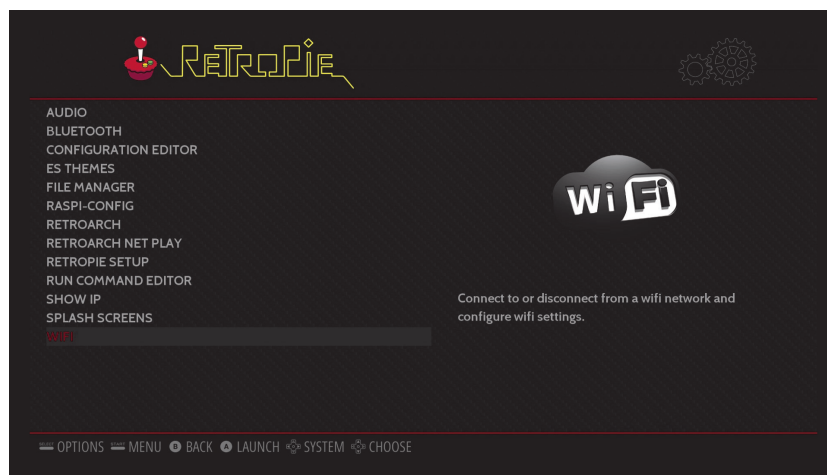


### 3.3 RetroPie Network settings

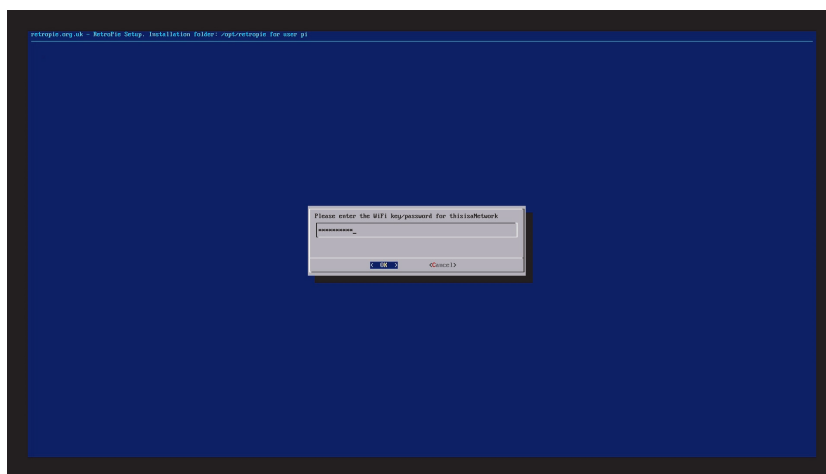
To communicate with the Arcade-Gamestation in a network, you have to integrate it to your existing home network.

You can either connect it with a normal RJ45 network-cable to your router or you can connect it wireless by WiFi.

To connect the Gamestation to your WiFi, navigate to „WiFi“ in the RetroPie-Settings and follow the assistant.



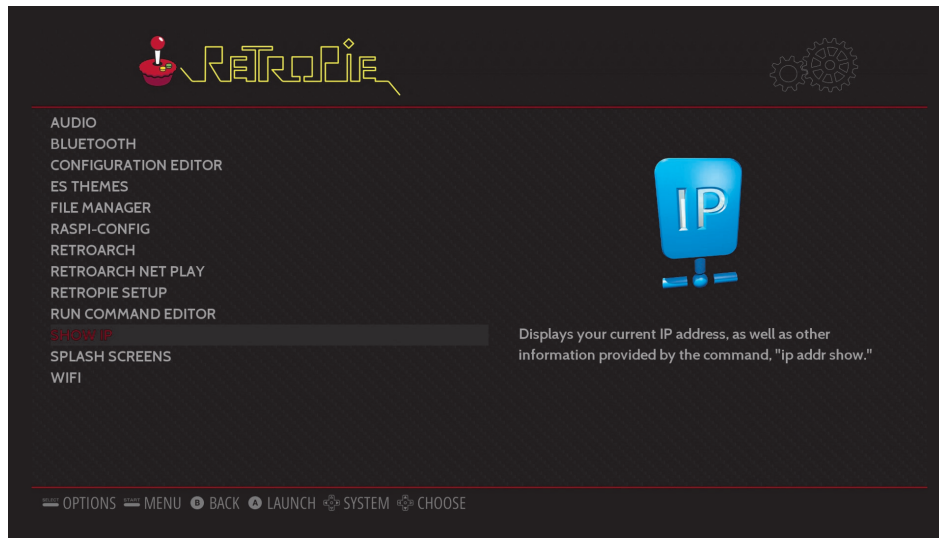
To enter the WiFi-keyword, you have to connect an USB-keyboard.



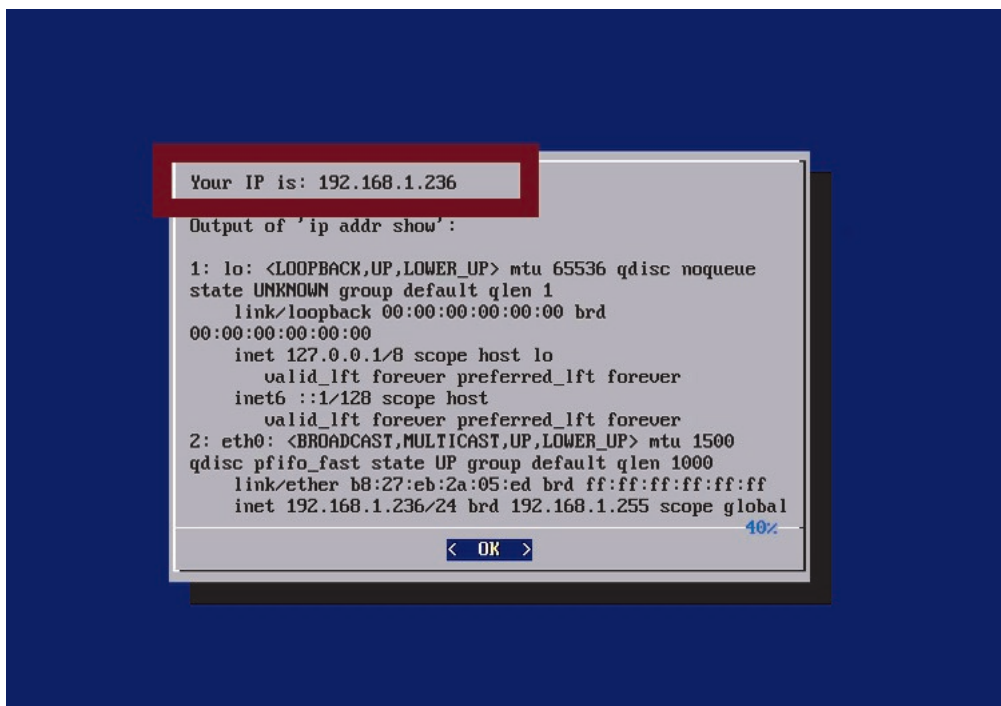
### 3.3 Network settings

After integrating the Gamestation to your network, you can see the current IP-  
Networkaddress at „Show IP“.

You will need the IP-Address later to transfer new ROM-Files.



In this case, the IP-Address is: „192.168.1.236“





### 3.4 RGB-LED Light-control

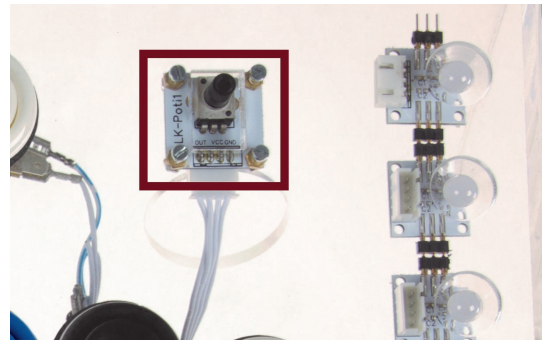
A stripe of 8mm RGB-LEDs is mounted around the case of the Arcade-Gamestation. This stripe, when active, is configured to play a lightshow of multiple colors.



The currently active lightshow is changeable by adjusting the rotary-potentiometer at the top-right corner.

The lightshows are changing as follows:

- Position 1: RGB-LEDs off
- Position 2: All LEDs red
- Position 3: All LEDs green
- Position 4: All LEDs blue
- Position 5: Color-carousel
- Position 6: Color-thunder white
- Position 7: Color-thunder red
- Position 8: Color-thunder blue
- Position 9: Rainbow-change
- Position 10: Rainbow-carousel
- Position 11: Rainbow-color-thunder



You will find an instruction for setting up your own lightshow in the expert section later [Page 21].

### 3.5 Arcade-Gamestation Boot/Shut down

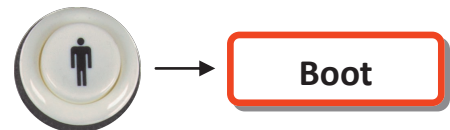
The Arcade-Gamestation will boot automatically when the mUSB-power-supply is connected to the power outlet.

If you want to turn off the Gamestation after using, just press the two black buttons simultaneously.

The Gamestation will shut down and the RGB-LED lightshow will turn off.

If you want to reactivate the Gamestation, just press the „Start“-Button.

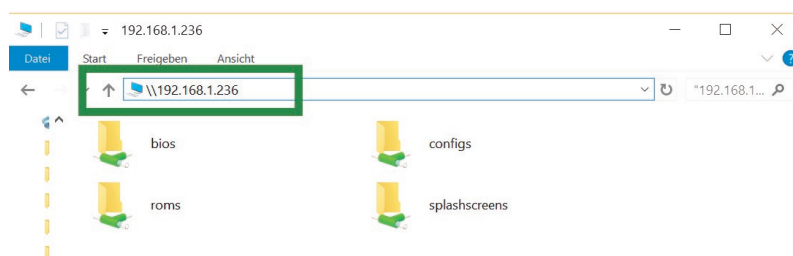
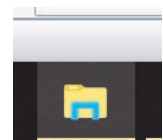
After a short loading time, the Gamestation will boot up again.



### 4.1 Copying ROM-Files / installing games

When the Arcade-Gamestation is connected to your network, you can start copying your ROM-Files by entering the IP-Address in a Windows-Explorer window. You can check the mentioned IP-Address, as described under note 3.2, at „Show IP“ in the RetroPie-Configurationmenu.

Start an Explorer-Window on a Windows Computer\* and enter the IP-Address with the „\\“-tag in front of the Address. In our case, we have to enter \\192.168.1.236 and confirm with the enter-button.

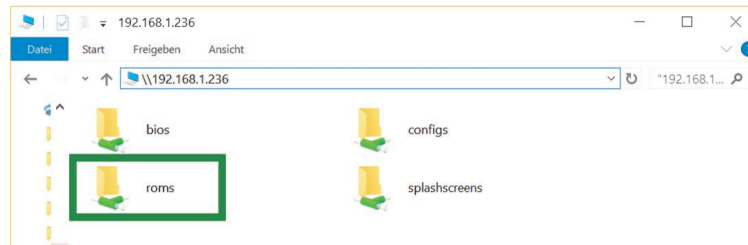


\*[For the procedure of different Computer- / Operating systems, please consider the documentation of the specific system. The transfer is, in this case, made with a so-called Samba-Share.]

### 4.1 Copying ROM-Files / installing games

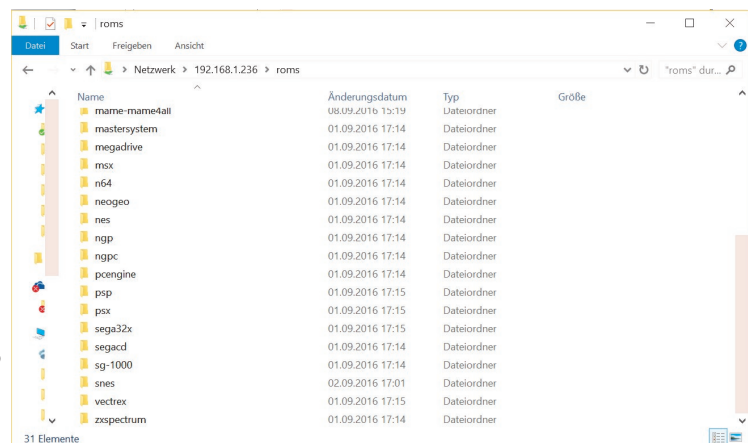
You should see four network-folders.

To copy games to the Gamestation, open up the „roms“ folder.

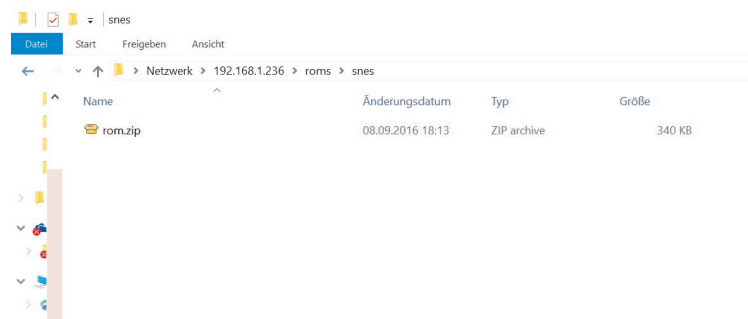


In this folder you will find more folders which represent the emulating-systems.

Therefore, for example, the folder „snes“ is responsible for providing ROM-Files for the emulation of Super Nintendo games for the SNES Emulator.



In most cases you have to copy the ROM-Files as a zipped file (not unzipped) into the folder.



After restarting the Gamestation, a new emulation-system should be available in the main menu which contains the gamelist of the copied ROM-Files.



## 4.1 Copying ROM-Files / installing games

### Special case: MAME [Arcade ROMS]:

The MAME emulation-system provides the emulation of Arcade-Slot-Machines.

The difference to the normal game-consoles is that the games are not in single elements (cartridges, CDs) but spread over multiple chips.

To emulate a specific slot-machine, a complete set of dumps of every build-in chip is needed.

#### Managing ROMs

dankushions edited this page 8 days ago · 82 revisions

RetroPie uses forks of the [MAME](#) and [FinalBurn Alpha](#) emulators that work well on the Raspberry Pi hardware, but are based on older versions of the original code. Your ROMs may be for earlier or later versions of MAME/FBA and if they are, they most likely will not work.

To understand what a MAME ROM is and contains and why they are different between different emulator versions, check out: [Demystifying MAME ROMs Tutorial](#) by ChoccyHobNob.

You may also find this forum post explains how arcade emulators work with RetroPie: [How to use MAME with RetroPie - Help Guide](#)

The following chart is a quick reference for all the arcade emulators in RetroPie.

Emulator	Romset	# of ROMs	.DAT Files	Compatibility List
<a href="#">mame4all</a>	0.37b5	2270	<a href="#">.DAT</a>	<a href="#">List</a>
<a href="#">lr-mame4all</a>	0.37b5	2270	<a href="#">.DAT</a>	<a href="#">List</a>
<a href="#">lr-mame2003</a>	0.78	4705	<a href="#">.DAT</a>	<a href="#">List</a>
<a href="#">lr-mame2010</a>	0.139	8782	<a href="#">.DAT</a>	<a href="#">List</a>
<a href="#">adv-mame-.94</a>	0.94	5563	<a href="#">.DAT</a>	<a href="#">List</a>

► Pages **146**

#### Wiki Home P

#### Getting Startec

- [First Installation](#)
- [WiFi](#)
- [Controller Config \(RetroArch\)](#)
- [Transferring gam](#)
- [Scraping Games](#)
- [Runcommand La](#)
- [Getting the right](#)
- [Updating RetroP](#)
- [Using SSH](#)

#### Emulators

- [3do](#)

If you won't read out the data of a slot-machine by yourself, but obtain the data from another source, you will encounter the term „Romset“.

This term has prevailed and is used for a summary of multiple ROM-Files: To save disk space, a ROM-File might not contain every needed chip-copies. The slot-machines build-in chips are often used in multiple machines. Therefore, just a single copy of the multiple used chip is provided in a Romset.

That is the reason why some ROM-Files can not be played by the emulator. Some ROM-Sources just don't provide complete ROM-Files.

If you don't read out the data by yourself, please consider the documentation of your ROM-Source.

They often describe how to complete your ROM-File.

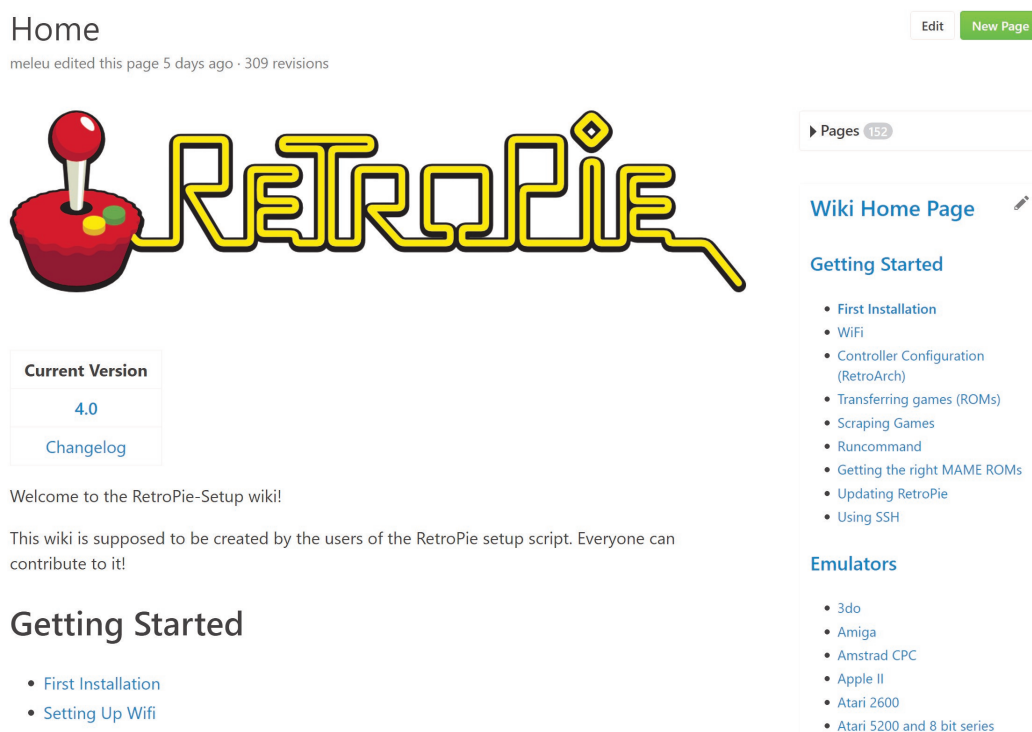
The Arcade-Emulators of the RetroPie-System are prepared for different Romsets. You can find further informations about this and where to copy the ROM-Files in the RetroPie-Documentation here:

<https://github.com/retropie/retropie-setup/wiki/Managing-ROMs>

## 4.2 Emulators

The RetroPie-Software contains a lot of emulators for different systems. You can find further informations about the supported systems, where to put the ROM-Files and which ROM-Files are not supported (due to compatibility problems) in the documentation of the RetroPie-Software:

<https://github.com/retropie/retropie-setup/wiki>



Home  
meleu edited this page 5 days ago · 309 revisions

Edit New Page

Pages 152

Wiki Home Page

Getting Started

- First Installation
- WiFi
- Controller Configuration (RetroArch)
- Transferring games (ROMs)
- Scraping Games
- Runcommand
- Getting the right MAME ROMs
- Updating RetroPie
- Using SSH

Emulators

- 3do
- Amiga
- Amstrad CPC
- Apple II
- Atari 2600
- Atari 5200 and 8 bit series

Current Version

4.0

Changelog

Welcome to the RetroPie-Setup wiki!

This wiki is supposed to be created by the users of the RetroPie setup script. Everyone can contribute to it!

Getting Started

- First Installation
- Setting Up Wifi

Please note: The emulators snes9x, Ir-Genesis-Plus-GX and Ir-picodrive are not contained in our preinstalled software-package because an unlimited publishing is not allowed by the license of the specific emulators.

Anyway, you can, if you are using them for private use, install them by yourself. The needed steps are mentioned under:

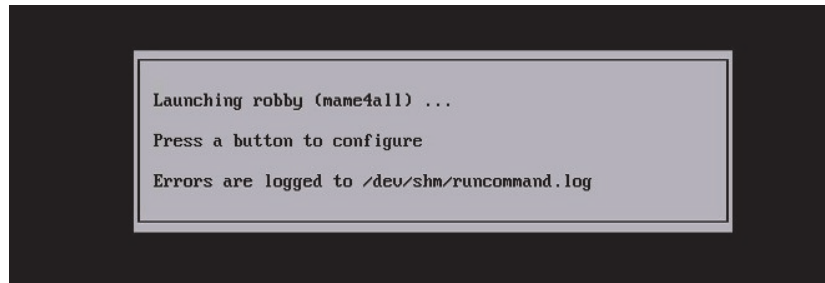
- „RetroPie -> RetroPie-Setup -> Manage packages -> main -> \*\*\*Emulator Name \*\*\*-> Install from binary“

All other emulators also the RetroPie software is published under the GPLv2 or the MIT-license. You can find a copy of the license in the filesystem at: „/home/pi/License/“



### 4.3 Emulator setup

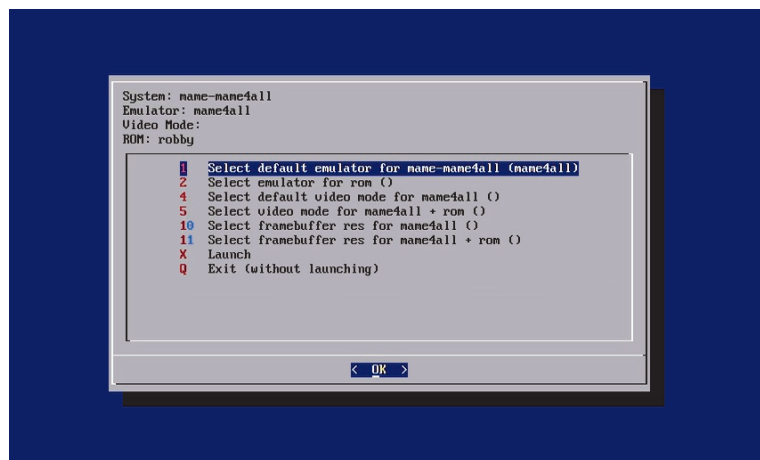
While launching a game from the gamelist of a system, you will see the following window.



Press any-key here to start the emulators configuration-menu.

Here you can adjust settings to the specific game.

(e.g.: it might be helpful to change the used emulator-software due to a higher compatibility)



### Exit emulator

Most emulators can be exited with the „Exit-Hotkey“ combination.

Press the three following buttons:

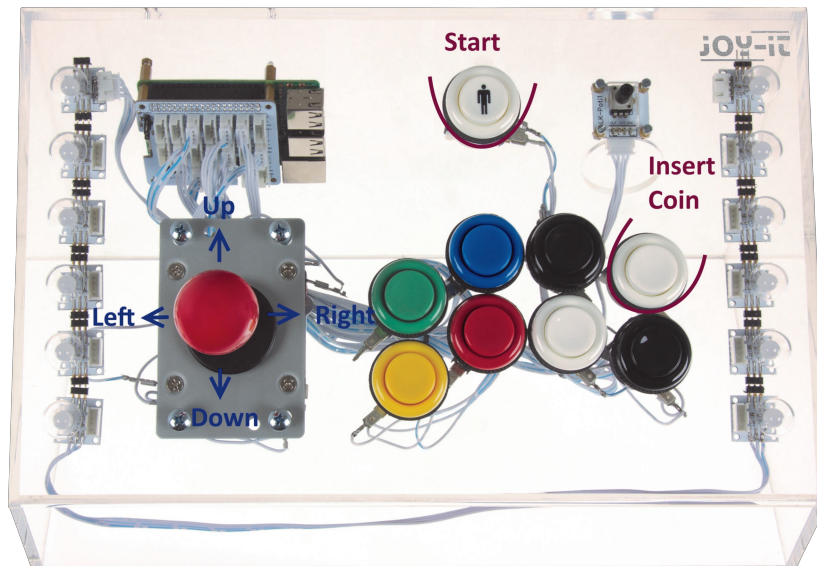
[Buttons with the number 4+8+9]



#### 4.3 Emulator setup

##### Control of the MAME4ALL[Arcade]-Emulator

Most emulators are using the mentioned „libretro“ controller-layout.  
But the Mame4ALL Arcade-Emulator is using an own controller-layout.



As usual for slot-machines, before playing the game, a coin is needed to be inserted.  
By pressing the upper right white button, you can insert a virtual coin.  
After inserting a coin, you can start the game with the start-button..

##### Exit the Mame4ALL Emulator

You can not exit a Mame4ALL-Game with the usual „Exit Hotkey“ combination.  
Press both white buttons simultaneously to exit this emulator.



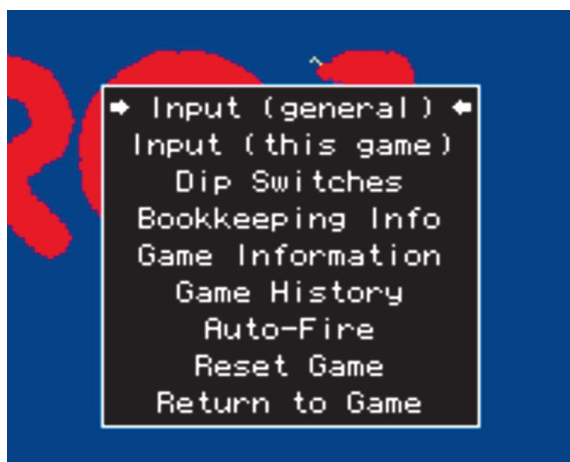
## 4.3 Emulator setup

### Mame4ALL Emulator configuration menu

The Mame4ALL[Arcade]-Emulator might, depending on the game, need some additional configuration. To perform these configurations, press the following combination:



The following menu should appear. You can navigate just like in chapter 3.2 for the command-line setup (Red button: Enter—White Button: Escape).





## 5. Expert chapter

Set up a light-show configuration on your own

The mounted 8mm RGB-LEDs contain a WS2812 chipset and are connected in series.

The Raspberry Pis PWM output generates the needed data sequence on GPIO-Port 12 which are send to the strip and forwarded to every single LED.

The creation of this code, and also the control, is provided by the rpi\_ws281x library by jgarff ([https://github.com/jgarff/rpi\\_ws281x](https://github.com/jgarff/rpi_ws281x))

You can change our preinstalled lightshow by your wishes and ideas.

The Python-script-file, which is executd automatically at every startup (with /etc/rc.local) is stored here:

</home/pi/ArcadeGamestationApps/RGBLedLightshow/RGBLedLightshow.py>

Assign Button-Control-Assignment

As mentioned earlier, the arcade-buttons are translated by the software to a keyboard-input.

The software for translating is called GPioneer and is written by mholgatem (accessible here: <https://github.com/mholgatem/gpioneer>)

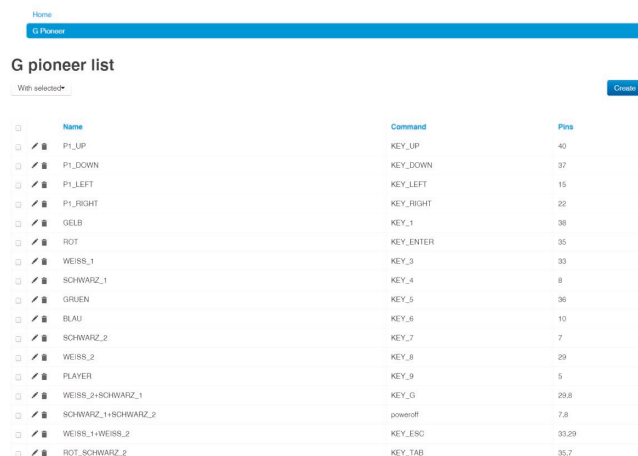
If you want to change the button-assignment, you can do this on any computer by entering the IP-Address of your Arcade-Gamestation in your browser.

A website will open up which allows you to configure every button.

It also allows you to use multiple GPIO-PINs to assign a button-combination.

Even the transfer of Linux-Systemcommands is possible.

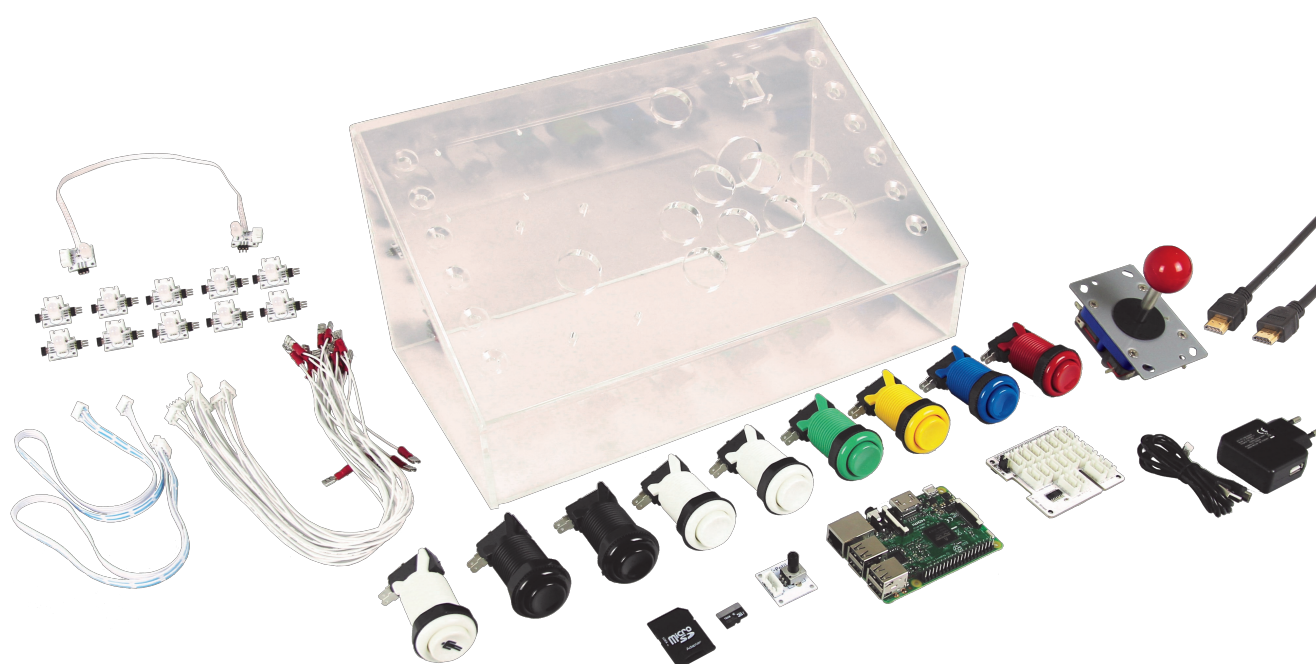
Please note that the used PIN-Numbers comply to the real physical numbering (e.g.: GPIO12 -> Nr. 32).



The screenshot shows the 'GPioneer list' page of the GPioneer web interface. It features a table with columns for 'Name', 'Command', and 'Pins'. Each row represents a button configuration, including standard directions (UP, DOWN, LEFT, RIGHT), colors (GELB, ROT, WEISS, SCHWARZ, BLAU), and specific game controls (PLAYER, POWEROFF, ESC, TAB). A 'Create' button is visible in the top right corner.

Name	Command	Pins
P1_UP	KEY_UP	40
P1_DOWN	KEY_DOWN	37
P1_LEFT	KEY_LEFT	15
P1_RIGHT	KEY_RIGHT	22
GELB	KEY_1	38
ROT	KEY_ENTER	35
WEISS_1	KEY_3	33
SCHWARZ_1	KEY_4	8
GRUEN	KEY_5	36
BLAU	KEY_6	10
SCHWARZ_2	KEY_7	7
WEISS_2	KEY_8	29
PLAYER	KEY_9	5
WEISS_2+SCHWARZ_1	KEY_0	29,8
SCHWARZ_1+SCHWARZ_2	poweroff	7,8
WEISS_1+WEISS_2	KEY_ESC	33,29
ROT_SCHWARZ_2	KEY_TAB	35,7

# Assembly instructions













### 6. Assembly instructions

If you have purchased the Arcade-Gamestation as a construction set, you have to assemble it by using the following instruction.

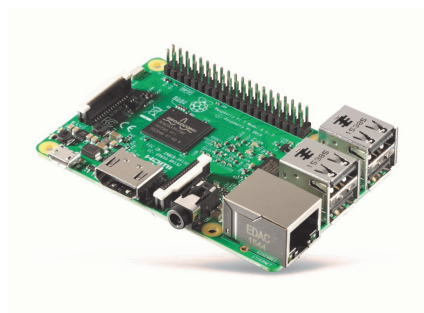
If any problems or difficulties should appear while assembling, we are glad to help you in a friendly call. You can reach us by phone under: 02845/936050 (german phonenummer)

This is an overview of every screw-elements, contained in this set, with its amount:

				
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
				
<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>

You can see in the following overview, which elements you'll need for the assembly processe:

**1x**



**1x**



### 6. Assembly instructions

**1x**



**1x**



**1x**



**1x**



**2x**



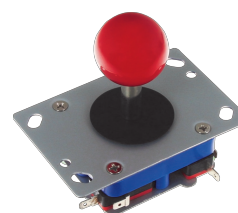
**2x**



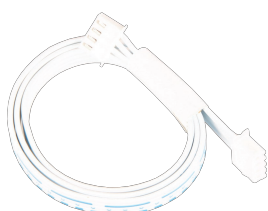
**1x**



**1x**



**2x**



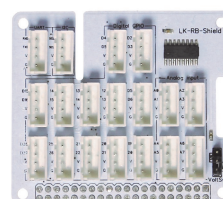
**7x**



**1x**



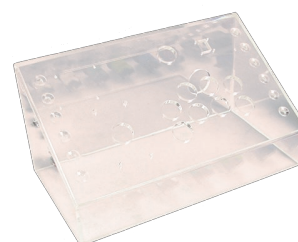
**1x**



**12x**



**1x**



\*The micro-switches, which belong to the buttons, are not listed separately

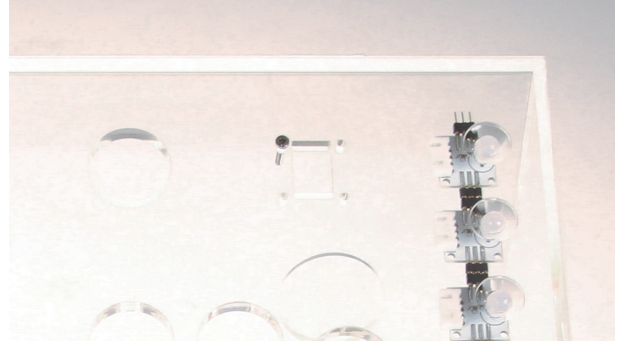
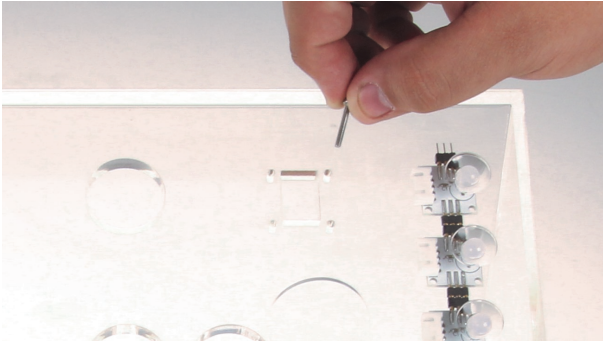
\*\* The 12 LinkerKit-RGB-LEDs are already glued to the acrylic-case

### 6. Assembly instructions

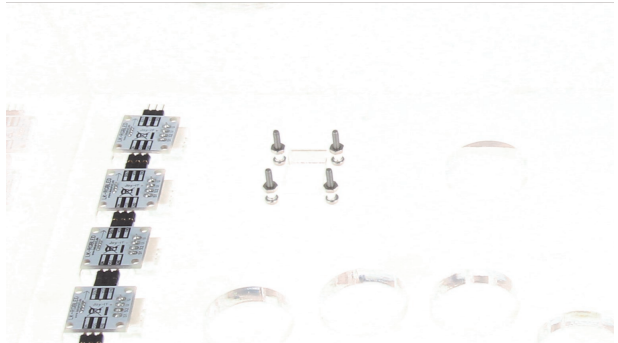
#### Step 1 | Installing the potentiometer for color-control

Start the assembling process with the installation of the rotary-potentiometer.

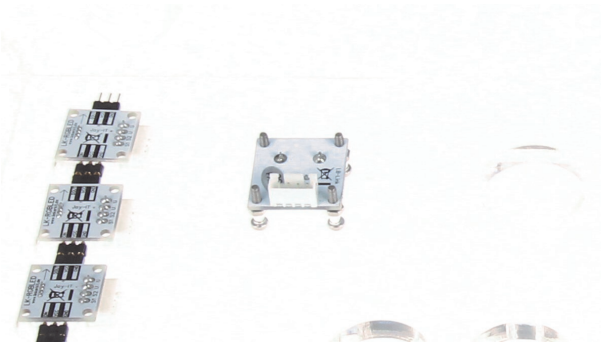
To mount the potentiometer, take a screw [B] and a nut [G]. Stick the screw [B] through the hole.



On the other side, screw down the nut [G] and repeat this step with the other three screws.



Next, place the potentiometer on the screws and mount it with four nuts [G].

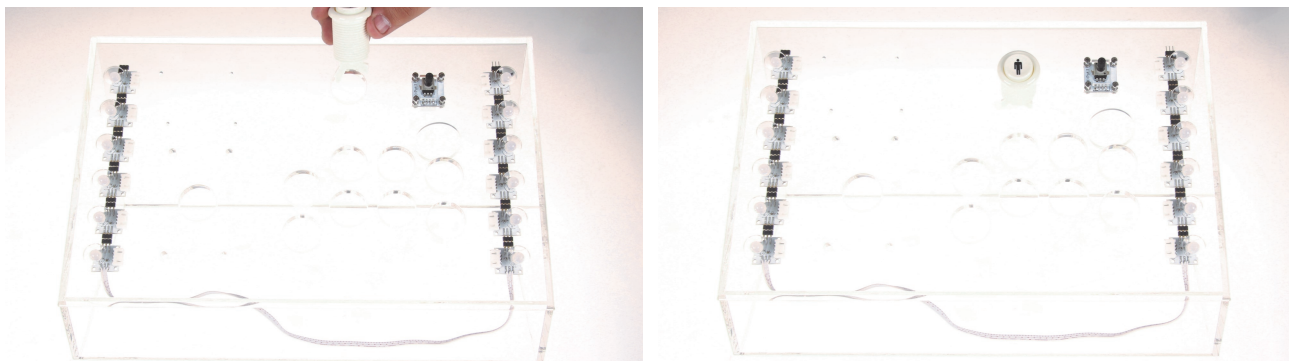




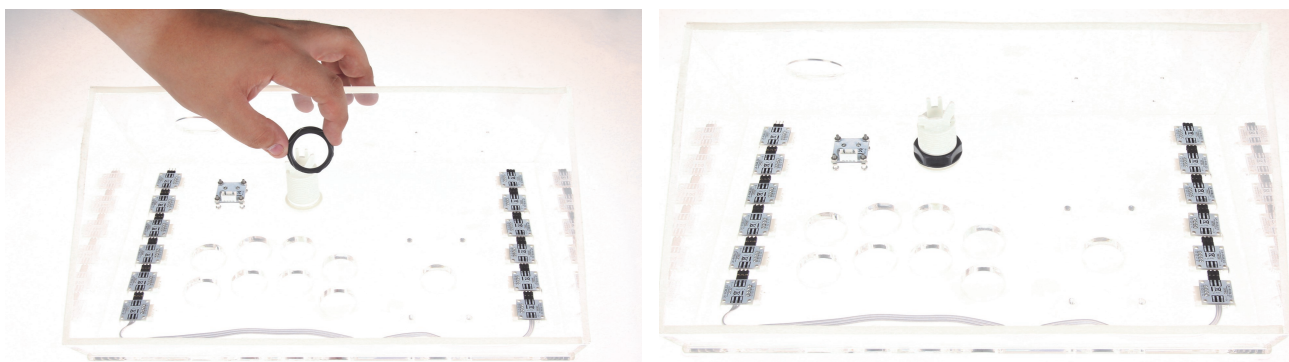
### 6. Assembly instructions

#### Step 2 | Mount the Arcade-Buttons

Take the button with the player-symbol and stick it through the hole.



Turn the case and screw down the button with the nut.



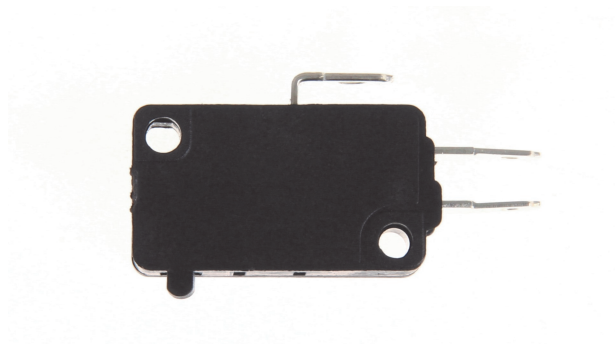
Repeat this process with the other buttons. Please note the colors and the orientation of the buttons:



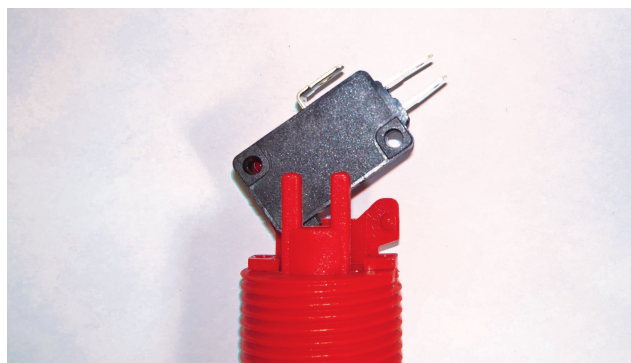
### 6. Assembly instructions

#### Step 3 | Mount the Arcade-Button microswitch

Next step is mounting the microswitch.



The microswitches are mounted by sticking the bottom hole on the microswitch into the plastic-pin. Press the microswitch to the right and press the upper hole of the microswitch down and stick it into the plastic-pin.



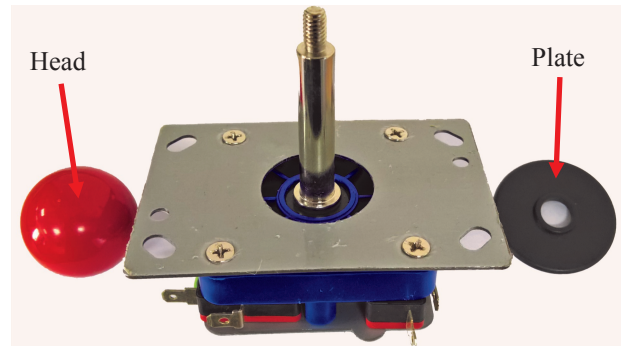
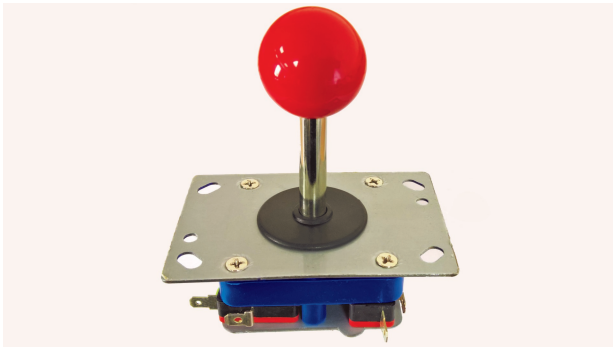
Repeat this step with the other buttons. Make sure that, while placing the buttons, the microswitches don't impede each other.



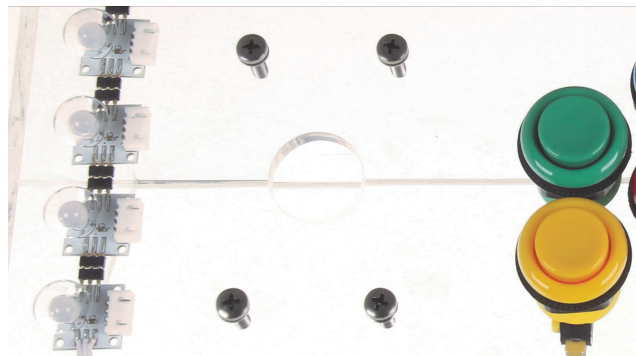
### 6. Assembly instructions

#### Step 4 | Installation of the joysticks

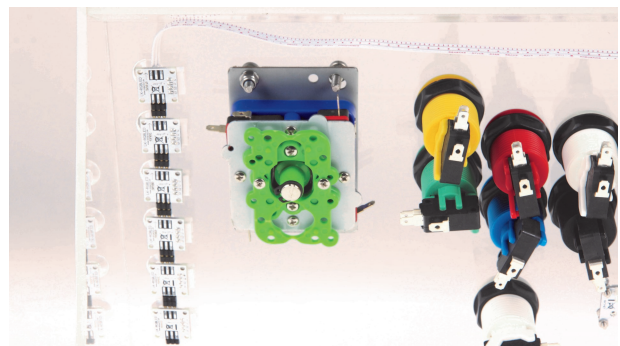
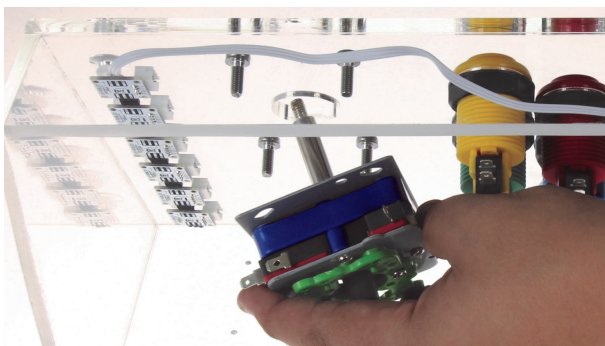
Next step is mounting the joystick. Unscrew the head of the joystick and take off the black plate.



To mount the joystick, take four screws [A] and washers [H] and stick them through the case from above.



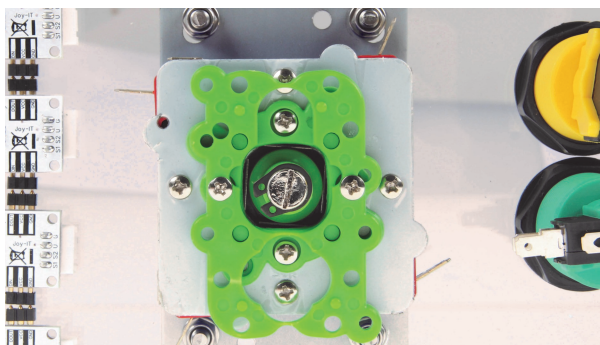
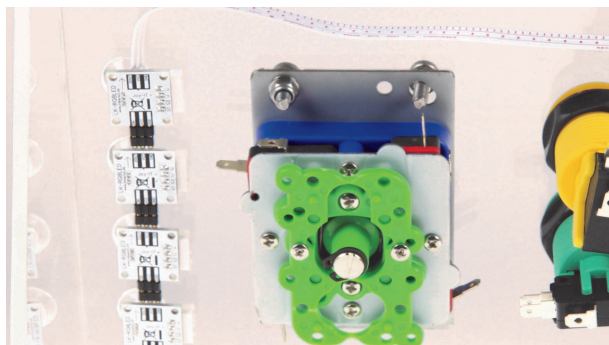
Place the joystick from below on the screws, take a washer [H], place it on the screw,



take a nut [F] and screw it tight. Repeat this process with the other three screws.



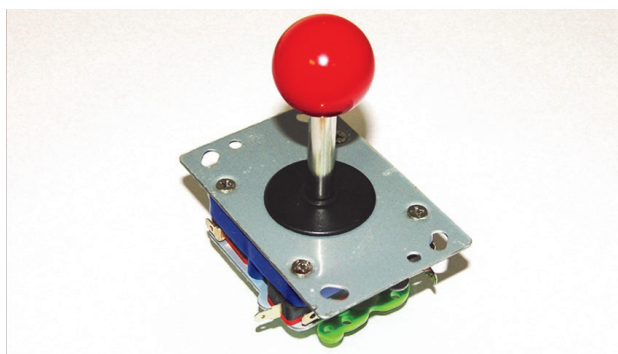
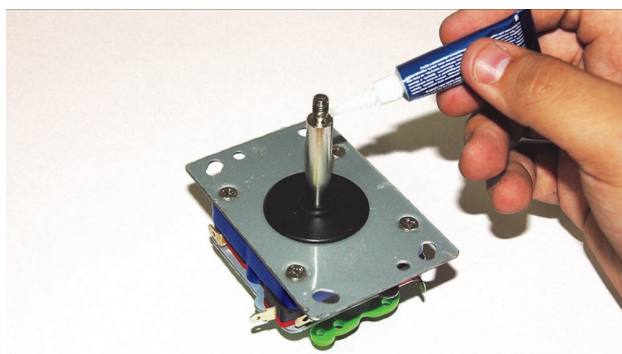
### 6. Assembly instructions



When the joystick is mounted, replace the black plate and screw on the head.



You can also cover the thread with some glue before screwing the head **after** you mounted it in the acrylic-case. This will fix the head but unmounting the joystick will not be possible anymore.

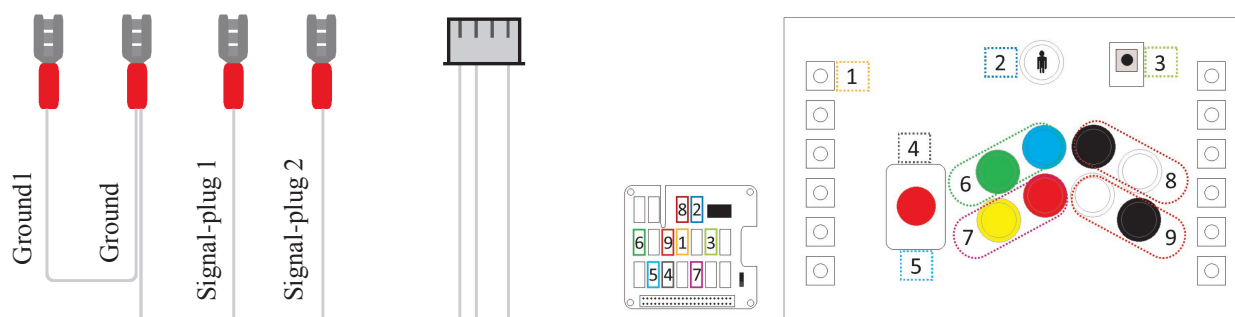


### 6. Assembly instructions

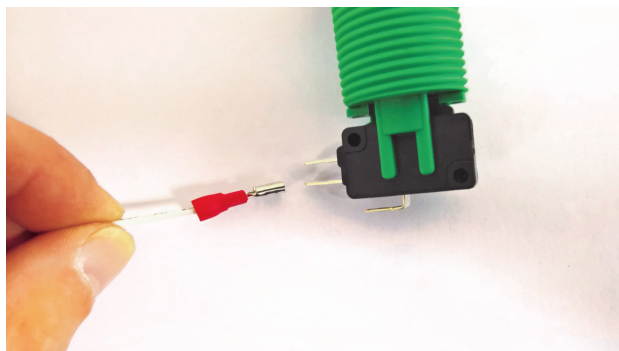
#### Step 5 | connecting the signal cable to the microswitches

One cable contains four plugs. Two for the signal and the other two for the ground. The two ground-plugs are on one cable, the two signal-plugs have their own cables. Up to two buttons become a connected to a unit.

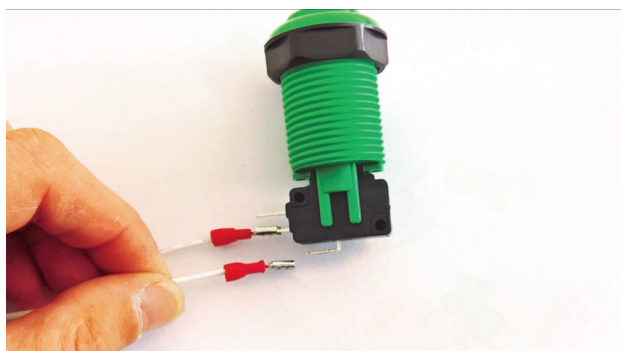
Please see the right image below to find out which buttons you have to connect in which way.



Connect the signal-plugs on the center contacts.

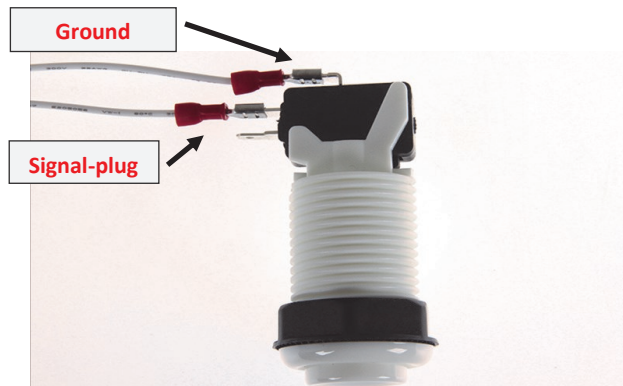


The ground-plugs are connected to the bottom contacts of the microswitches.

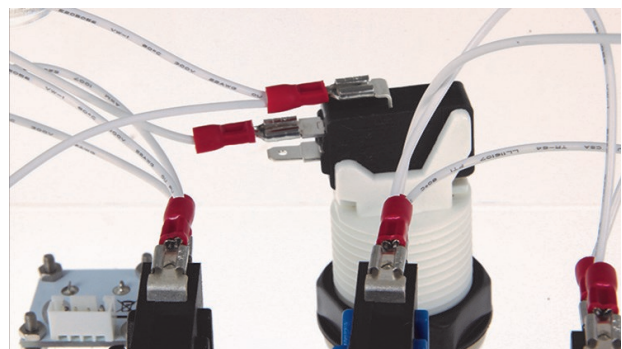


### 6. Assembly instructions

Because one cable has two signal- and two ground-plugs, take the remaining ground-plug and connect it to the upper contact of the next button.



Do the same process with the remaining signal-plug but connect it to the centered contact of the next button.

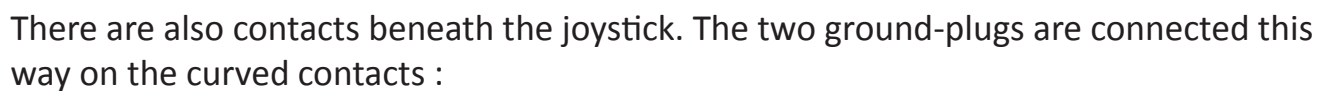
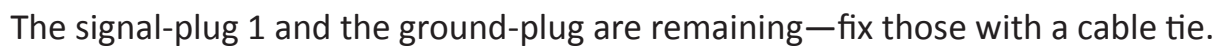


Repeat this process with the other buttons.



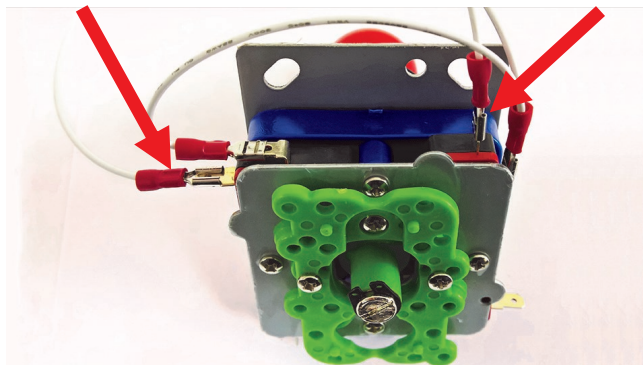


Its up to you which of the two signal-plugs you are going to use. But please note that there is an exception for the button with the player-logo:  
The inner second signal-plug is going to be used.

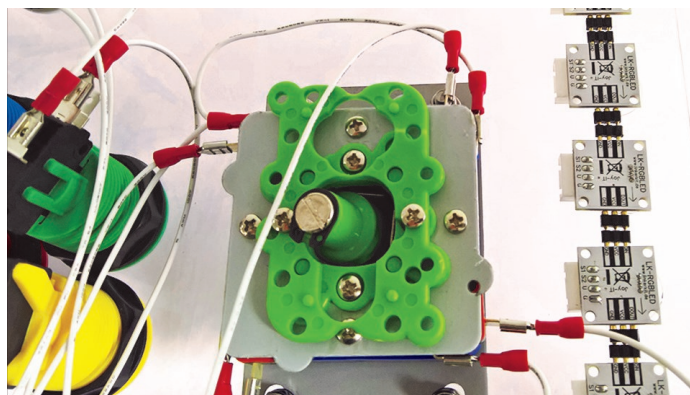


### 6. Assembly instructions

The signal-plugs have to be connected this way:

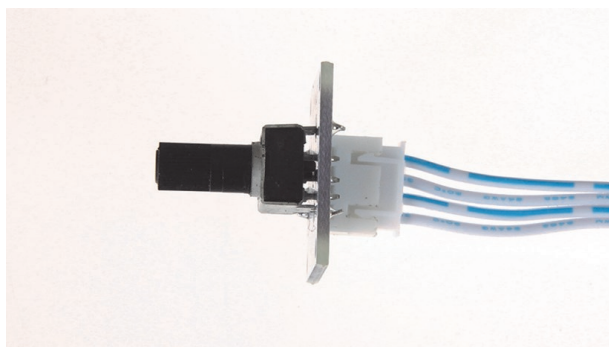


Repeat this process with the other four contacts of the joystick.



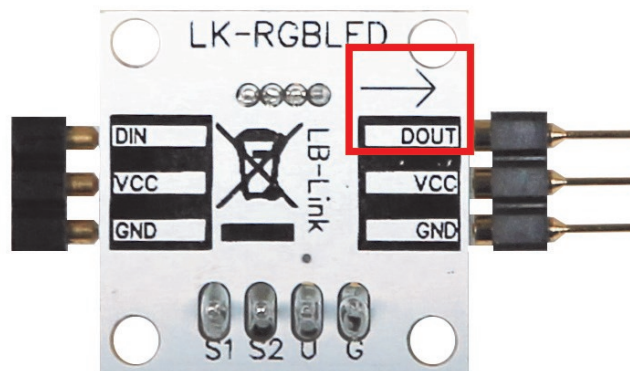
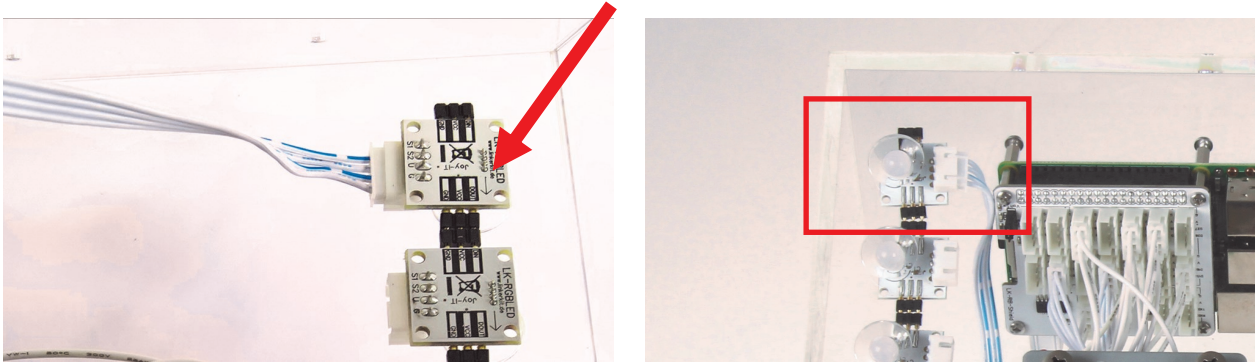
#### Step 6 | Installation of the potentiometers signalcable and the RGB-LEDs

Next, take one of the two cables which have a white connector on both sides and connect it to the connection of the potentiometer.



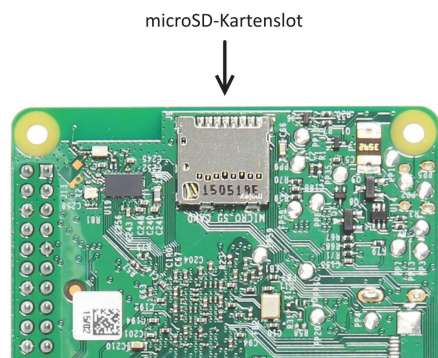
### 6. Assembly instructions

Plug the other cable in the connection of the first RGB-LED on your right side. The LEDs are having arrows on their back. The first arrow is starting at the first LED and shows in the direction of its next LEDs.



### Step 7 | Installation of the microSD-Card

Plug in the microSD-Card into the Raspberry Pis slot.

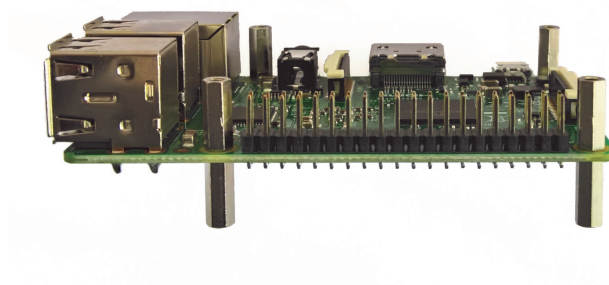
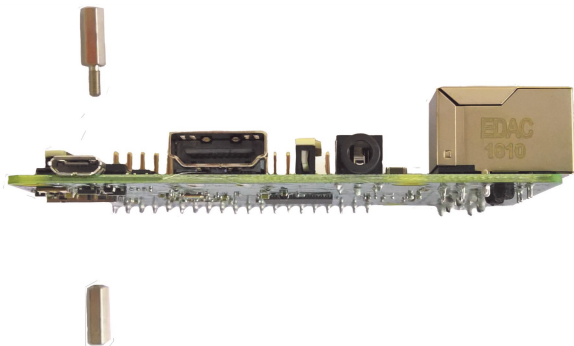




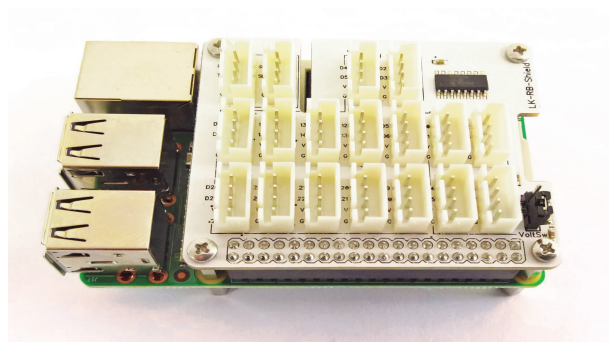
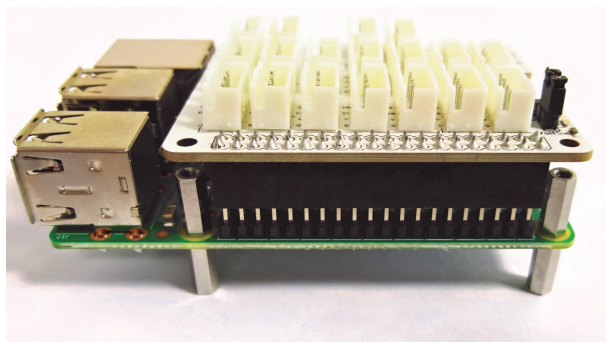
### 6. Assembly instructions

#### Step 8 | Assembling the Raspberry-Pi-control-center

To mount the Raspberry Pi, take the spacers [J] first. Stick them through the four yellow borderer holes on the board. Screw another four spacers [E] on the spacers from below afterwards.

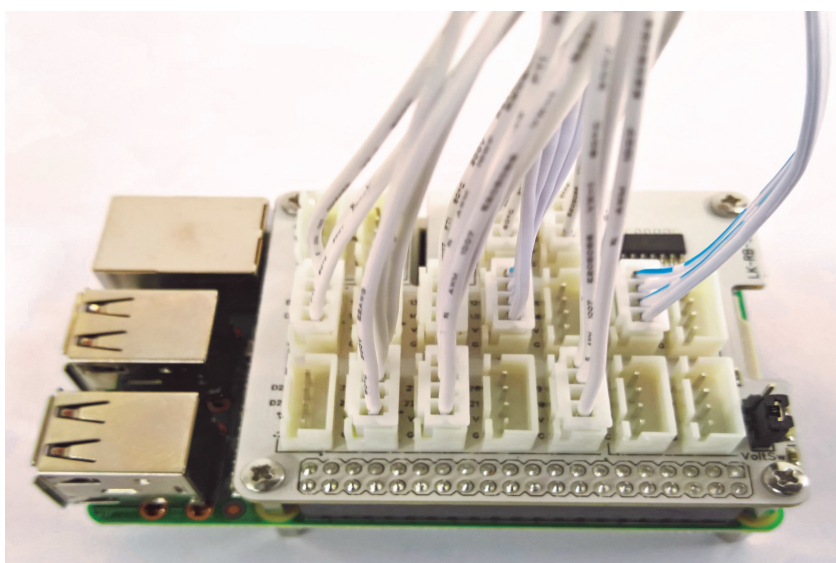
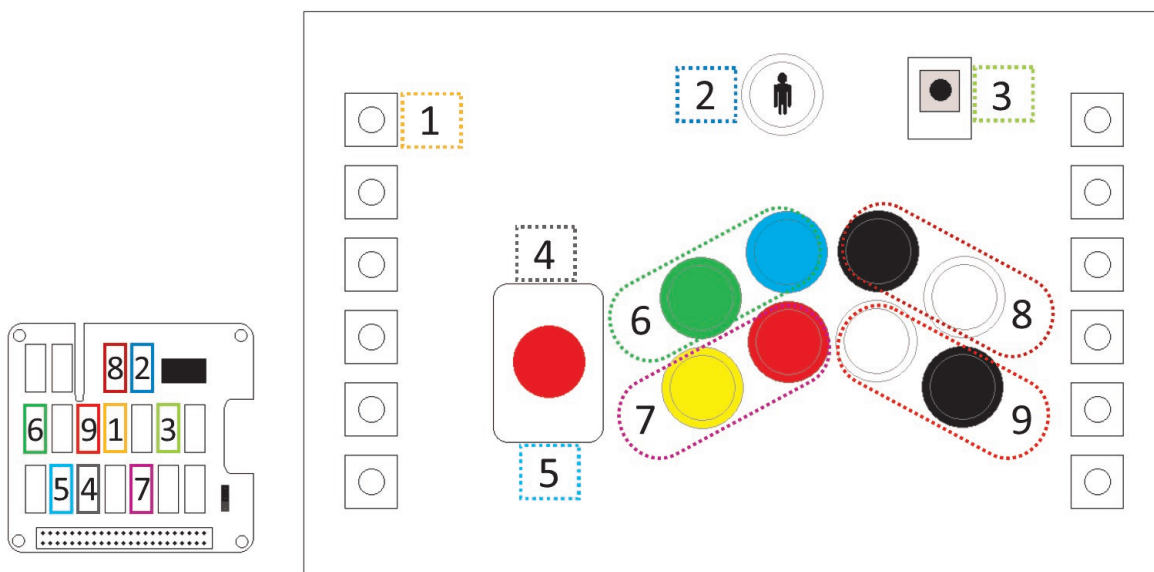


Mount the baseboard with four screws [D].



### 6. Assembly instructions

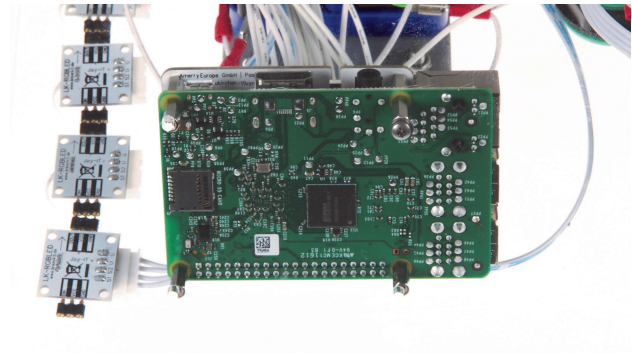
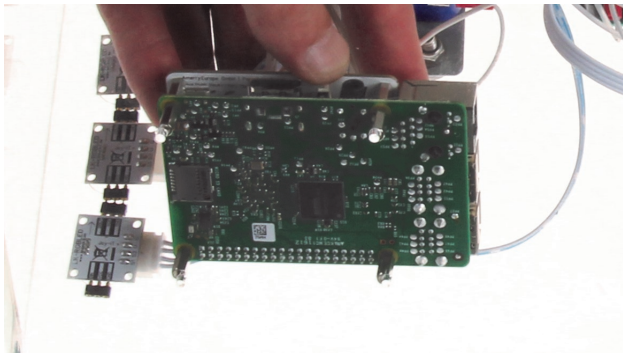
You have to place the cable ends on the baseboard. Which end belongs to which port is shown below:





## 6. Assembly instructions

Mount the Raspberry Pi in the case by mounting four screws [C] and washers [I] from outside.



Fix the remaining cables with a cable tie.

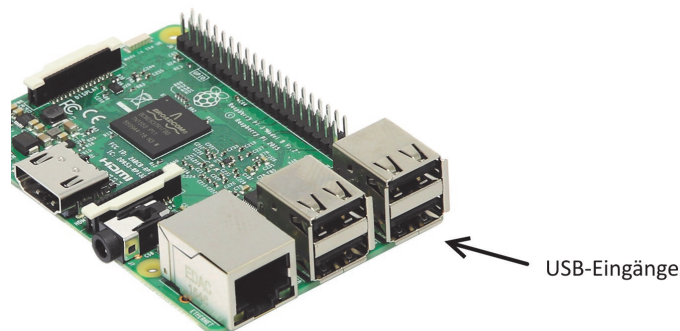


### Step 9 | Preparations for the first start up

Connect the Gamestation, as seen in chapter 2, with a HDMI-cable to a monitor or TV and with the microUSB-power-supply to power.

An USB-keyboard and USB-mouse is needed for the first startup.

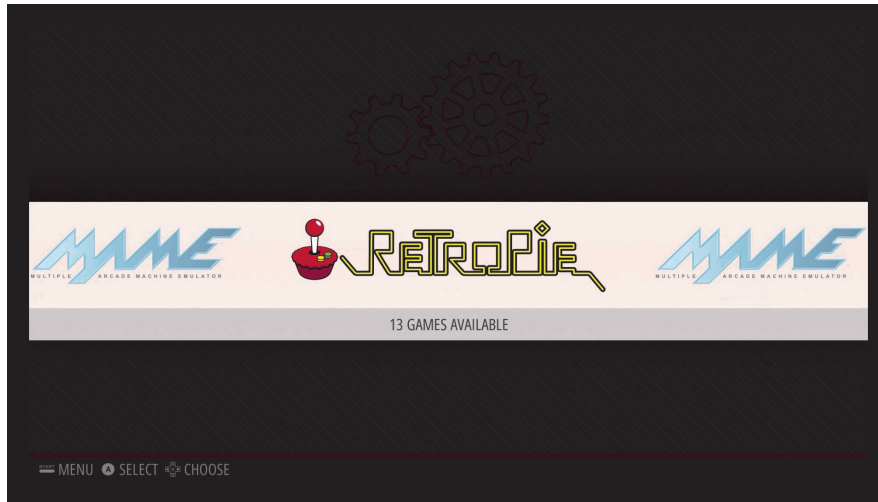
Connect them to the Raspberry Pi.



## 6. Assembly instructions

Step 10 | Calibrating the buttons and update their signal assignment

Let the Gamestation boot until it reaches the main menu.



Press the combination „CTRL+ALT+F4“ on your keyboard to enter the command line.

Enter the following command and confirm with „Enter“.

```
sudo pkill -9 -f GPioneer.py
```

The output will confirm this with „Killed“.

```
pi@raspberrypi:~$ sudo pkill -9 -f GPioneer.py
Killed
pi@raspberrypi:~$
```

Afterwards, enter the following command and confirm with „Enter“.

```
sudo python /home/pi/ArcadeGamestationApps/buttonchecker/buttonchecker.py
```

```
pi@raspberrypi:~$ sudo pkill -9 -f GPioneer.py
Killed
pi@raspberrypi:~$ sudo python /home/pi/ArcadeGamestationApps/buttonchecker/buttonchecker.py _
```

## 6. Assembly instructions

You are now entering the „buttonchecker“ program. This allows you to read the current pin assignment of the connected buttons:

By pressing a button, the assigned pinnumber is shown.

Write down the assignment (e.g. on the table of the next site) of each button (e.g. Yellow=38, Blue=10, Green=36...).

Please make sure that the upper white playerbutton has the pin-number 5.

If this is not the case, please check your wiring.

```
Arcade-Gamestation Button Check
-----
Es wurde die Nummer 40 Gedrueckt!
-----
Es wurde die Nummer 40 Gedrueckt!
-----
Es wurde die Nummer 37 Gedrueckt!
-----
Es wurde die Nummer 37 Gedrueckt!
-----
Es wurde die Nummer 37 Gedrueckt!
-----
Es wurde die Nummer 37 Gedrueckt!
-----
Es wurde die Nummer 37 Gedrueckt!
-----
```

After reading the pin-numbers for each button, exit the program with the combination „CTRL+C“.

## 6. Assembly instructions

You can note the matching pin-numbers in this table.

Name	Command	Pinnummer
JOYSTICK_UP	KEY_UP	
JOYSTICK_DOWN	KEY_DOWN	
JOYSTICK_LEFT	KEY_LEFT	
JOYSTICK_RIGHT	KEY_RIGHT	
Yellow	KEY_1	
Red	KEY_ENTER	
WHITE_DOWN	KEY_3	
BLACK-DOWN	KEY_4	
GREEN	KEY_5	
BLUE	KEY_6	
BLACK_UP	KEY_7	
WHITE_UP	KEY_8	
PLAYER	KEY_9	
WHITE_UP + BLACK_DOWN	KEY_G	
BLACK_DOWN + BLACK_UP	Poweroff	
WHITE_DOWN + WHITE_UP	KEY_ESC	
RED + BLACK_UP	KEY_TAB	

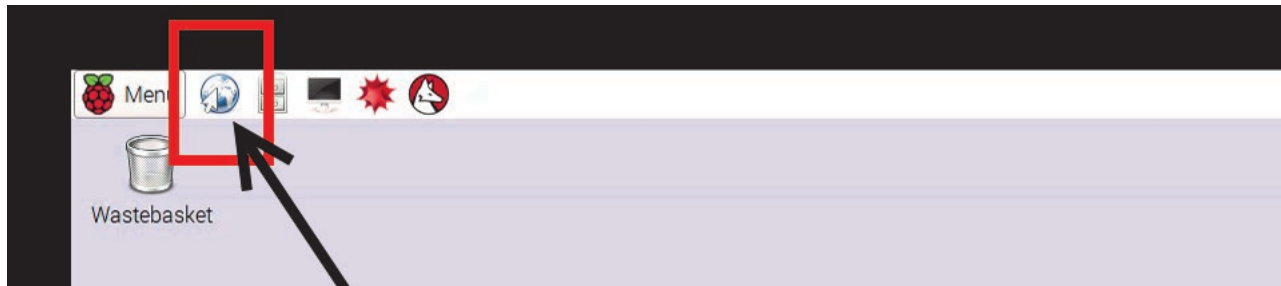
### Step 11

Back in the command line, enter the graphic interface with the following command:

```
startx
```

## 6. Assembly instructions

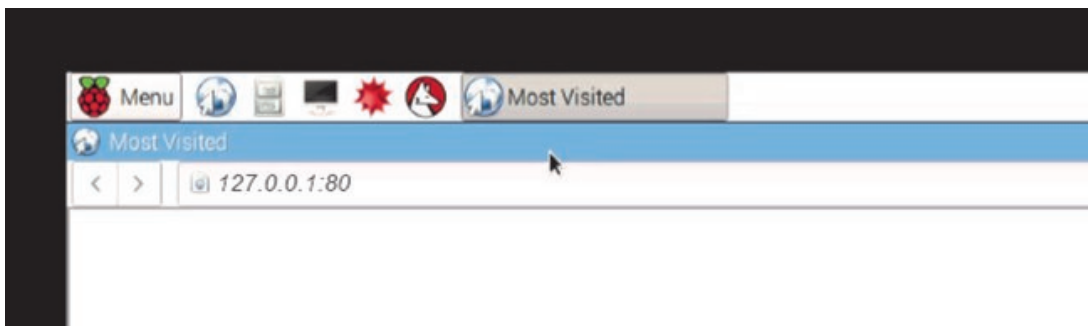
Start the internet browser



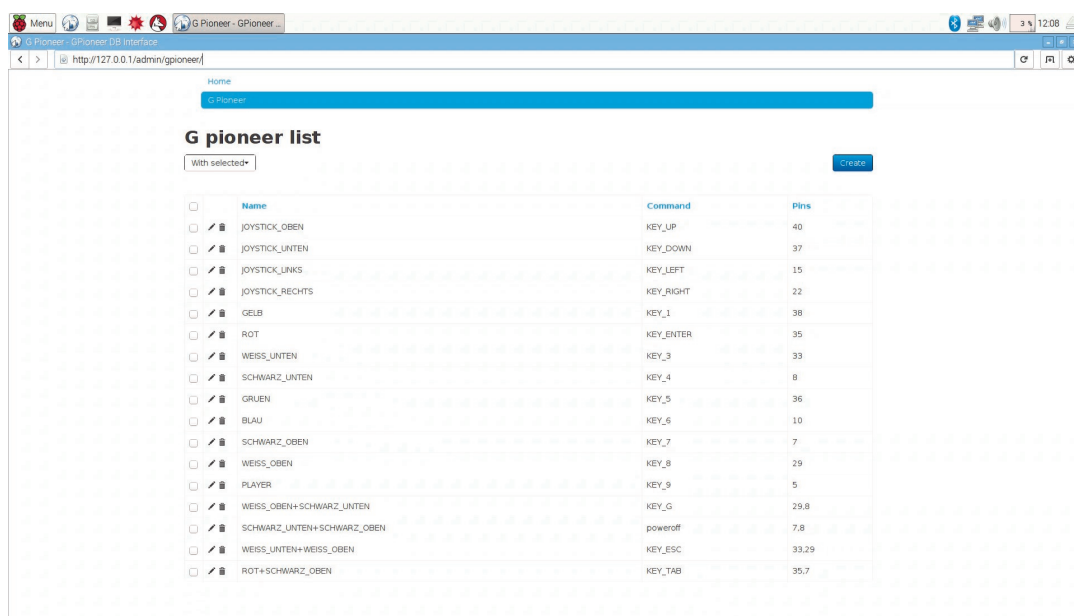
and enter the following address

127.0.0.1:80

and confirm with „Enter“.



This will open up the configuration-window of GPioneer.

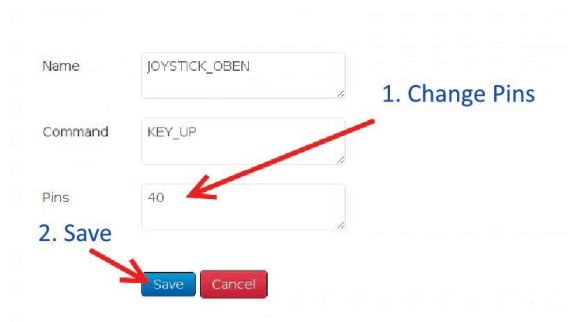


## 6. Assembly instructions

Here you can see a list of every button-assignment with the specific PIN-number of the Raspberry Pi. By clicking the pen-symbol on the left side, you can enter the configuration menu of the specific button.



Here you can change the PIN-number, if the assigned PIN is not matching with your notes from the previous step. Save your changes when you are done.



Also watch the combination-buttons (e.g.: whiteAchten Sie auch auf die Kombinationstasten. They also might need to be adjusted.

<input type="checkbox"/>		WEISS_OBEN+SCHWARZ_UNTEN		KEY_G	29,8
--------------------------	--	--------------------------	--	-------	------

Afterwards, click on the „Menu“-Button and choose „Shutdown -> Reboot“.

After restarting, the assembly is finished and your Arcade-Gamestation is ready.



## 7. Service

### OpenSource-Declaration

The preinstalled software-installation of the Arcade-Gamestation contains software which has been published under the Open-Source-Licenses BSD and GPL.

The associated license texts are saved on the SD card in the following folder:

>/home/pi/Licenses/

You can also request the specific license texts directly from us. You can find the software of the Arcade-Gamestation on our website:

<http://downloads.joy-it.net>

### Disclaimer

We do not assume liability for failures, data loss or incompleteness.  
Please make data backups in regular intervals.

### Declaration of conformity

As manufacturer, we, the Joy-IT Europe GmbH, declare that our product RB-Gamestation is meeting the requirements, during operation according to regulations, under the following terms:

RED-Term 2014/53/EU

RoHS-Term 2011/65/EU

You can request the detailed declaration of conformity from us under the following address:

JOY-iT Europe GmbH , Pascalstr. 8, 47506 Neukirchen-Vluyn

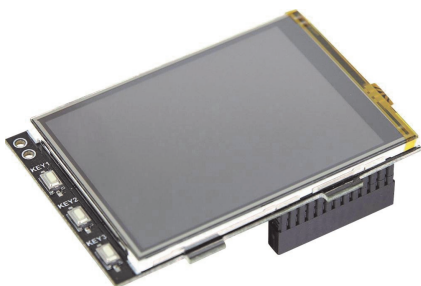


14.10.2016 Yue Yang Director



### 7. Service

Because you could only make a first view with the Arcade Gamestation into the world of the LinkerKit-System and the Raspberry Pi 3, we would like to call attention to further interesting elements from the LinkerKit and RaspberryPi-world:



#### Joy- IT 3.2“ TFT Touchscreen Display

Directly attachable to the GPIO-Pin-Header  
Compatible with every Raspberry Pi® version  
Additional three free assignable buttons

- Resolution 320x240
- Interface SPI
- Colors: 65.536
- Backlight: LED



#### Joy-IT SensorKit X40

Comprehensive sensor-set with 40 sensors  
including analog- and voltage-converters

- High-Quality, reliable sensors
- Universal usable
- including detailed description (including programming-examples for Raspberry and Arduino)

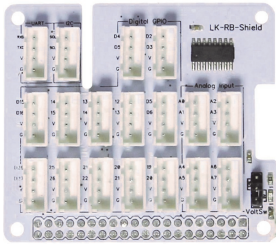


#### Joy-IT StromPi V2

Widerange power supply with USV-function for  
Raspberry Pi and other computers with USB  
power supply

- 6-61V DC Voltage input
- Output: 5V @3A

### 7. Service

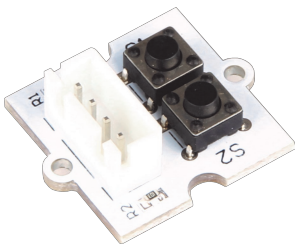


#### Linker Kit Baseboard

The Linker Kit Baseboard allows it to easily connect and control up to 12 LinkerKit-Modules.

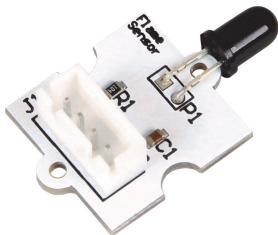
A lot of sensor-combinations are possible with this board.

- Compatible with all Linker Kit systems
- Compatible with Raspberry Pi A, B, B+
- Extends the Raspberry Pi by a 8-Channel analog-digital converter to process analog signals.



#### Linker Kit Board with 2 buttons

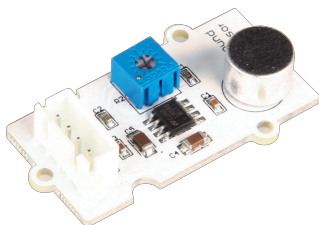
Extensionboard which contains two buttons.



#### Linker Kit Board with flamesensor

Depending on the lights intensity, it produces a variable voltage which is easy to analyse by a microprocessor.

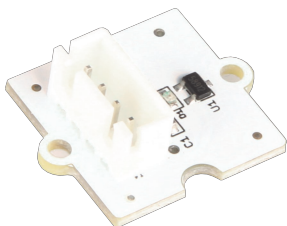
- IR- / UV-Sensor, matched to the color-range of flames
- Analog-Output, 0-3V
- Operates on 5V
- For Raspberry Pi A, B, B+, Arduino, pcDuino etc.



#### Linker Kit Board with sound-sensor

The board contains a microphone which can, due to the good response behaviour, be either used as a microphone or as a soundsensor.

- Elektret Microphone, LM386 und level setter
- Analog signal output and power supply through the über LinkerKit-wiring



#### Linker Kit Board with Hallsensor / Magnetsensor

This board contains a hall-sensor which detects magnetic fields.

- Breakout-Board with hallsensor Allegro A1101
- LED for operation-control

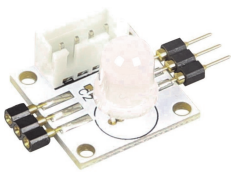
### 7. Service



#### Linker Kit board with joystick

This board contains a mini-joystick with analog Y-X coordinate-output which can control games or other controls.

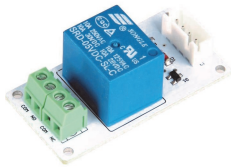
- Breakout-Board with analog X/Y-output for ADC-Controller-analysis
- X/Y-Output with 2 potentiometers and one button



#### Linker Kit Board with 8 mm RGB-LED

Any amounts of this RGB-LEDs can be connected together. Every LED is controllable with the integrated controller. Any colors and patterns can be created.

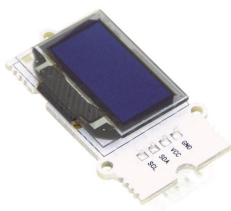
- 8-mm-RGB-LED WS2812, lights in 16,7 million colors with 256 brightness-levels
- LED controllable by microcontroller (Arduino, Raspberry Pi, pcDuino)
- Color and brightness adjustable
- Multiple modules can be connected together



#### Linker Kit Board with switching relais

This module contains a switching relais which is controllable by one I/O-PIN.

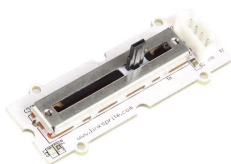
- Breakout-Module with transistor-switching-step, LED and relais
- NO/NC-switching-contact 30 V/10 A



#### Linker Kit Board with OLED-Display 0,96"

It features a high contrast, a wide perspective, low power requirement, a very compact build and it communicates over an I<sup>2</sup>C-Interface.

- OLED-Display, 128 x 64, monochrom, blue
- Communicationinterface: I<sup>2</sup>C, Driver: SSD1306
- Operating Voltage: 3,3–5,5 V
- Operating Temperatur: -30 to +70 °C

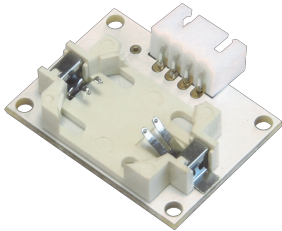


#### Linker Kit Board with slide-potentiometer

Sensitiv analog inputs between 0V and Vcc are possible with this potentiometer.

- Breakout-Board with linear slide-potentiometer, distance 40 mm
- LED controllable by another PIN

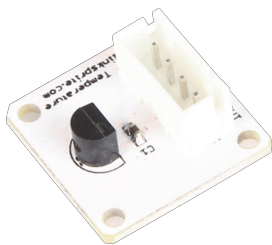
### 7. Service



#### Linker Kit Board with Real-Time-Clock

Based on a RTC-Chip DS1307, which is controlled by I<sup>2</sup>C-Bus. The chip is powered by a button cell even by a turned off microcontroller-system.

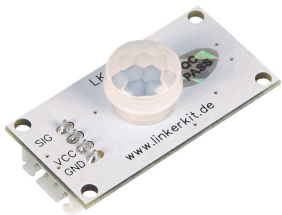
- RTC-Module with I<sup>2</sup>C-Chip DS1307
- Output of date and time (24/12-h-Format) over I<sup>2</sup>C-Bus
- Internal correction-function



#### Linker Kit Board with temperature sensor

The temperature-sensor creates a voltage, proportional to the temperature which is analyseable by an  $\mu$ C-ADC-Port.

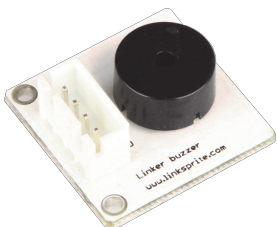
- Linear temperature-sensor TMP36, range -40 to +150 °C
- Output voltage 0,1 V (-40 °C) to 2,0 V (150 °C)



#### Linker Kit board with infrared motion-sensor

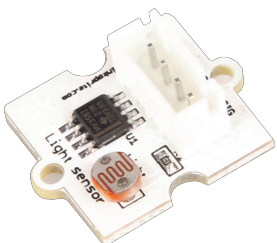
The motion-sensor can be used to trigger controlling processes (e.g. to control light or the Raspberry Pi's camera).

- Detection angle: 120°
- Capture-range 3 to 6 m, adjustable
- Matching to the Linker-Kit-System for Arduino and Raspberry Pi



#### Linker Kit board with buzzer

This buzzer can be connected to digital outputs to create a sound. It can also be connected to an analog pulse-width-modulation output to create different sounds and effects.



#### Linker Kit board with light-sensor

The breakout-board is equipped with a light-sensor and a signal amplifier.

- Analog signal output proportional to the surrounding brightness

## 7. Service

We are always there for you

If there are any further questions or problems, we can help you by mail, phone or by our ticket-supportsystem.

E-Mail: service@joy-it.net

Ticket-System: <http://support.joy-it.net>

Phone: +49 (0)2845 98469 – 66 (11- 18 Uhr)

Find latest manuals here:

<http://anleitung.joy-it.net>

Find latest downloads here:

<http://downloads.joy-it.net>

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Arcade-GameStation

