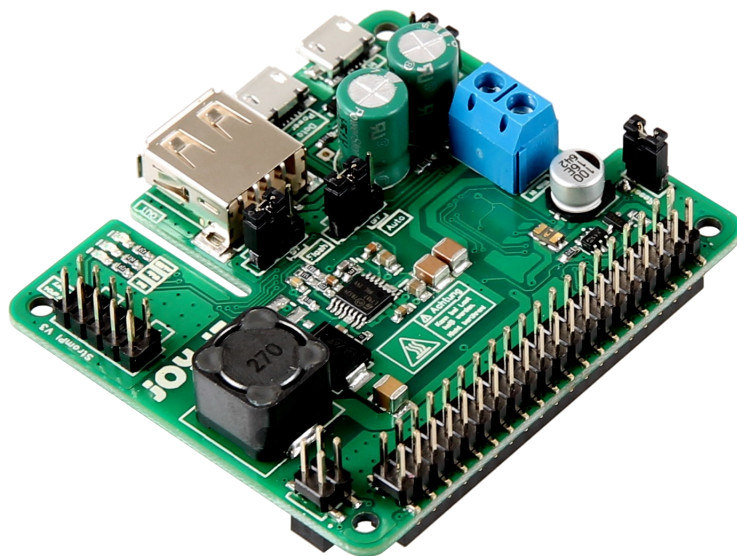


joy-it



StromPi 3

Softwaremanual

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1. OVERVIEW

Dear customer,

Your StromPi 3 offers you various software-controlled options that can be executed by your Raspberry Pi using separate scripts. We would like to introduce you to these in this manual. Below you will find an overview of the available scripts, the setup and use of which will be explained in detail later in this manual.

Scriptname	Description	Function
RTCSerial	Configuration of the real-time clock	Keeps the time of your Raspberry Pis up to date, even after a power failure
serialShutdown	Automatic shutdown	Enables time-controlled shutdown, and safe shutdown in the event of a power failure
sendmail	E-mail notification	Sends an email to notify you when a power failure is detected



Attention! For using the serialShutdown and sendmail scripts, the shutdown timer is required. First activate this in the serial console. By executing the scripts, the duration of the shutdown timer should be at least 20 seconds.

Therefore, open the serial console to configure the shutdown timer:

```
sudo screen /dev/serial0 38400
```

Enter the command "**startstrompiconsole**" to start the console.

Now set the duration of the shutdown timer:

```
set-timer <Sekunden>
```

Now activate the timer:

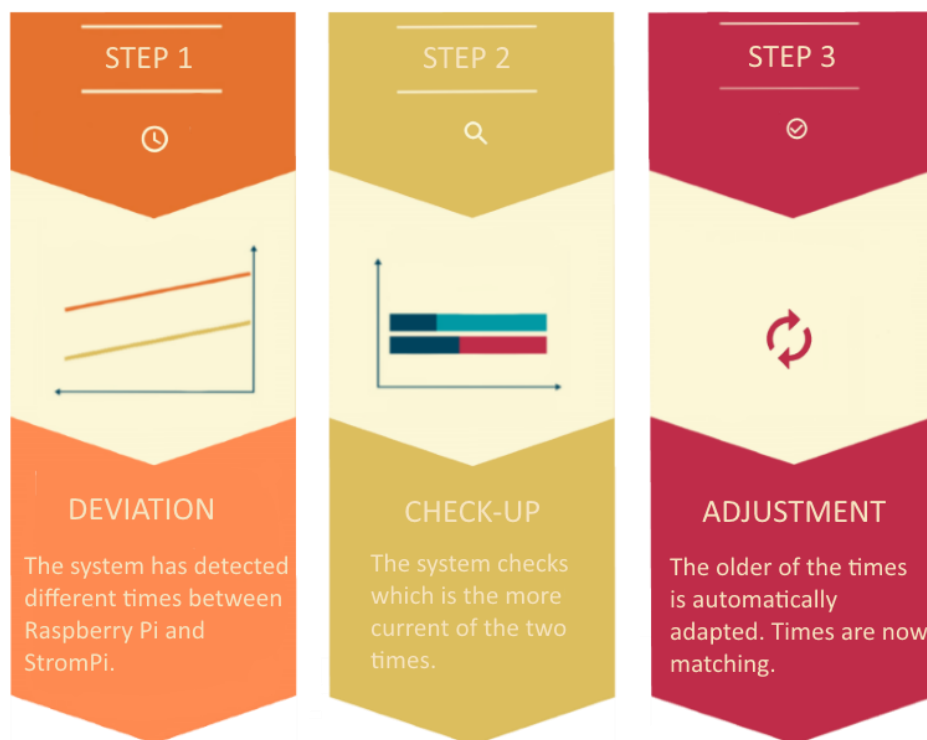
```
set-timer-enable 1
```

2. REAL TIME CLOCK

2.1 Function

Many Raspberry Pis applications, operations and functionalities are timed. In the event of a power failure, the entire timeout is disrupted because, even if power is restored, the Raspberry Pi system time may no longer match the real time.

The RTCSerial script automatically matches the real time clock time with the current system time of the Raspberry Pi. If one of the two times differs, the more current time is automatically set as the system time.



2.2 Installation

You can download the current version of the **RTCSerial** script in the [download area of the StromPi website](#).

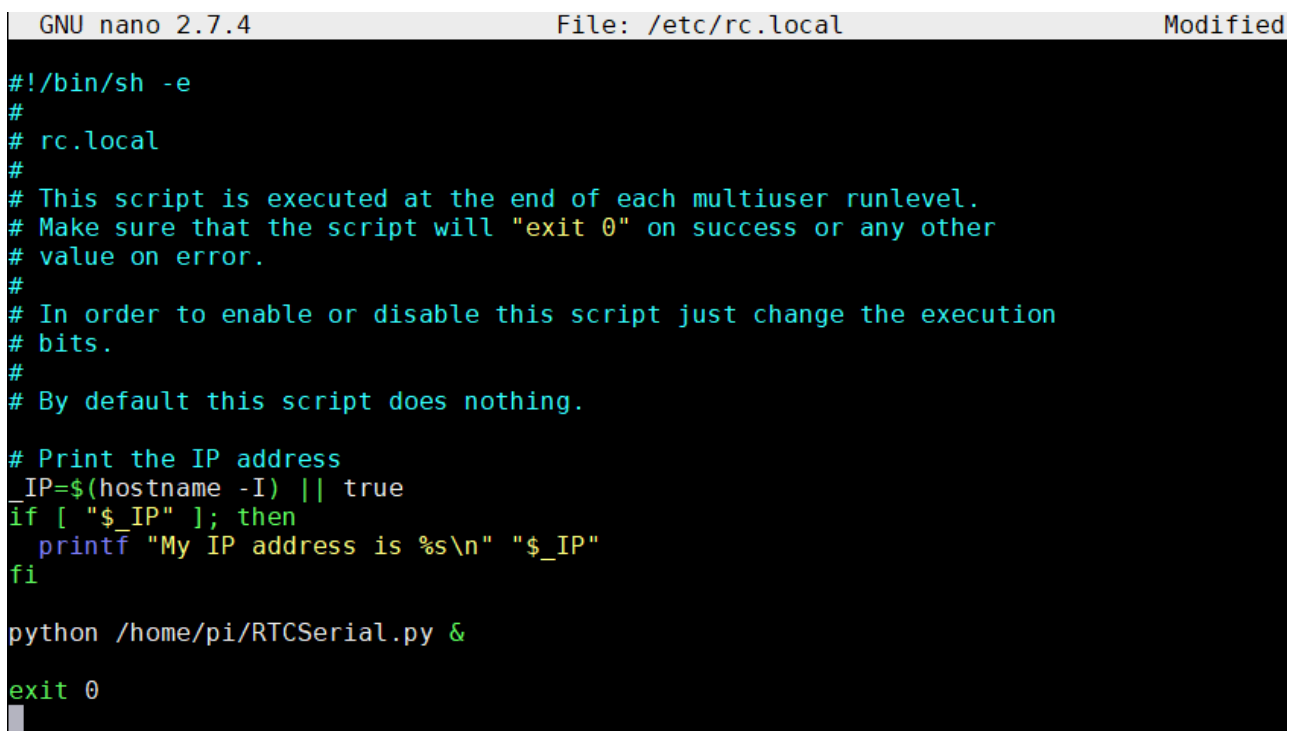
Simply transfer the unzipped script to your Raspberry Pi and copy it to the autostart. Open the file **rc.local**:

```
sudo nano /etc/rc.local
```

To add the script to the autostart, all you have to do is insert the following command at the **end** of the file, but before the "**exit 0**" command.

```
python /home/pi/RTCSerial.py &
```

The file should look like this:



```
GNU nano 2.7.4 File: /etc/rc.local Modified
#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.
#
# By default this script does nothing.
#
# Print the IP address
_IP=$(hostname -I) || true
if [ "$_IP" ]; then
    printf "My IP address is %s\n" "$_IP"
fi
python /home/pi/RTCSerial.py &
exit 0
```

Now save the file with the key combination **CTRL+O**, confirm with Enter and exit the editor with the combination **CTRL+X**.



Attention! Please note that you may have to change the path of the RTCSerial file if you have not saved it in your home directory.

3. AUTOMATIC SHUTDOWN

3.1 Function

Often it is not necessary to keep the Raspberry Pi permanently active when it is only needed at certain times. With the **serialShutdown** script it is possible to automatically shutdown your Raspberry Pi at the times you set in the serial console (**power-off alarm**). In addition, this script allows safe shutdown in case of power failure, so that still active programs and systems can be shut down (**Shut Down**).

3.2 Installation

You can download the current version of the **serialShutdown** script from the [download area of the StromPi website](#).

Simply transfer the unzipped script to your Raspberry Pi and copy it to the autostart. Open the file **rc.local**:

```
sudo nano /etc/rc.local
```

To add the script to the autostart, all you have to do is insert the following command at the **end** of the file, but before the "**exit 0**" command.

```
python /home/pi/serialShutdown.py &
```

The file should look like this:

```
GNU nano 2.7.4          File: /etc/rc.local          Modified
#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.
#
# By default this script does nothing.
#
# Print the IP address
_IP=$(hostname -I) || true
if [ "$_IP" ]; then
    printf "My IP address is %s\n" "$_IP"
fi

python /home/pi/serialShutdown.py &

exit 0
```

Now save the file with the key combination **CTRL+O**, confirm with Enter and exit the editor with the combination **CTRL+X**.



Attention! Please note that you may have to change the path of the serialShutdown file if you have not saved them in the home directory.

Please note that the integration of the script alone is not sufficient. Depending on the application, an additional activation of the power-off alarm or the shutdown in the serial console may be necessary.

3.3 Manual Shutdown

If the Raspberry Pi is shut down with the usual procedure ("shutdown -h"), the StromPi will continue to be supplied with power.

If both components are supposed to be switched off, this can be done via the serial console after the serialShutdown script has been integrated into the system.

Simply open the serial console...

```
sudo screen /dev/serial0 38400
```

...and enter the following command:

```
poweroff
```

First the Raspberry Pi shuts down, triggered by the serialShutdown script.
A few seconds later, the StromPi also shuts down.

So if you want to shut down your system, you should always do so via the serial console and not via the usual procedure. This is the only way to shut down both components properly.



Attention! The serialShutdown script is mandatory for shutting down both devices. Without an integrated script only the StromPi will be shut down. The Raspberry Pi remains active in this case.

4. E-MAIL NOTIFICATIONS

4.1 Function

Important systems often depend on the control and/or monitoring of a Raspberry Pi. A power failure could have fatal consequences. For this reason the StromPi 3 can be extended with the **sendmail** script by an automatic notification function. In case of a power failure a notification email will be sent automatically.



Attention! Please note that the notification function is only possible for simultaneous use with the **serialShutdown-SendMail** or **RTCSerial-serialShutdown-Sendmail** script.

4.2 Installation

You can download the current version of the **sendmail** script in the [download area of the StromPi website](#).

Simply transfer the extracted script to your Raspberry Pi. Make sure that you copy it to the same directory where your **serialShutdown-SendMail** or **RTCSerial-serialShutdown-Sendmail** file is located.

Don't forget to include the appropriate script in the autostart file (**rc.local**).

4.3 Configuration

Before you can use the notification function, you must first add some parameters, such as the server, e-mail addresses, etc..

To do this, navigate in a terminal window to the location of your **sendMail.py** file and open the file with the following command:

```
sudo nano sendmail.py
```

Add the required parameters here, save the file with the key combination **CTRL+O**, confirm with **Enter** and exit the editor with the combination **CTRL+X**.

5. USE OF MULTIPLE SCRIPTS

Due to the serial communication only one StromPi script can be used in the autostart of the Raspberry Pis. Please make sure that there are not several StromPi scripts in the autostart file.

Of course we don't want to take away the possibility to use the full potential of StromPi 3. For this reason we have developed several scripts that allow you to use all script functionalities at the same time.

If you need several functions at the same time, simply exchange the script with the required script in Autostart. All scripts are available in the [download area of the StromPi website](#).

The following script combinations are available:

Scriptname	Scope of functions
RTCSerial-serialShutdown	Automatic clock setting (real time clock) and automatic shutdown
RTCSerial-serialShutdown-Sendmail	Automatic clock setting (real-time clock), automatic shutdown and e-mail notifications

7. SUPPORT

We also support you after your purchase. If there are any questions left or if you encounter any problems, please feel free to contact us by mail, phone or by our ticket-supportsystem on our website.

E-Mail: service@joy-it.net

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

Phone: +49 (0)2845 98469 – 66 (9:30 - 17:00 o'clock)

For further information please visit our website:

www.joy-it.net

