Raspberry Pi **B+** and I2S *RPi-DAC*

The new *Raspberry Pi* comes as new **B+** (*Bplus*) version.
It results in a GPIO pin change on header (the P5 is gone)
and a modified setup for I2S (different *pinmux*).

This document provides help how to get **I2S DAC** working
on **RPi B+**.

Figure 1: RPi B+ and RPi-DAC, RPi-DAC-FPGA

In order to get an existing I2S DAC, e.g. **RPi-DAC**, **RPi-DAC-RCA** working, you need:
- jumper wires to connect DAC P5 with RPi B+ GPIO header J8
- Linux **Kernel Patch**: an updated kernel module for changed GPIO pins and pinmux
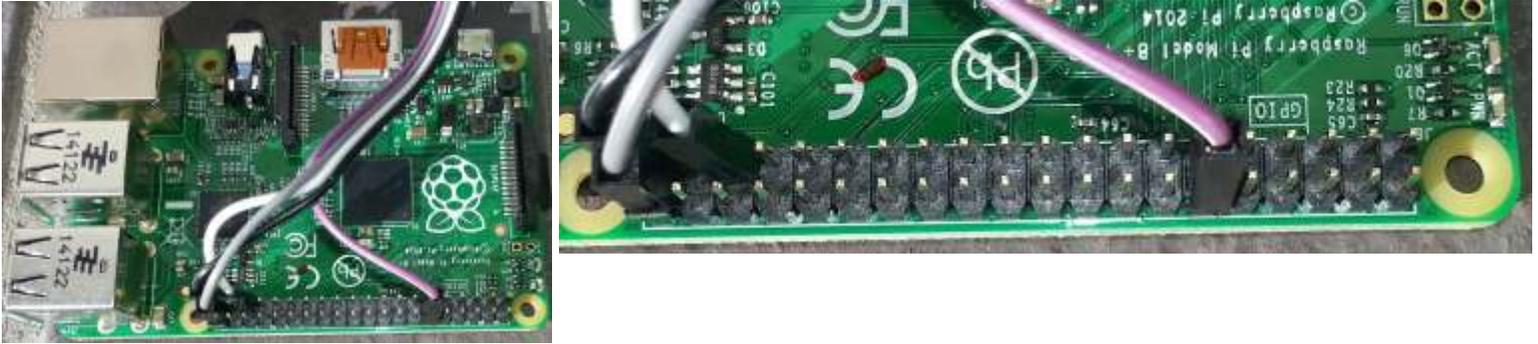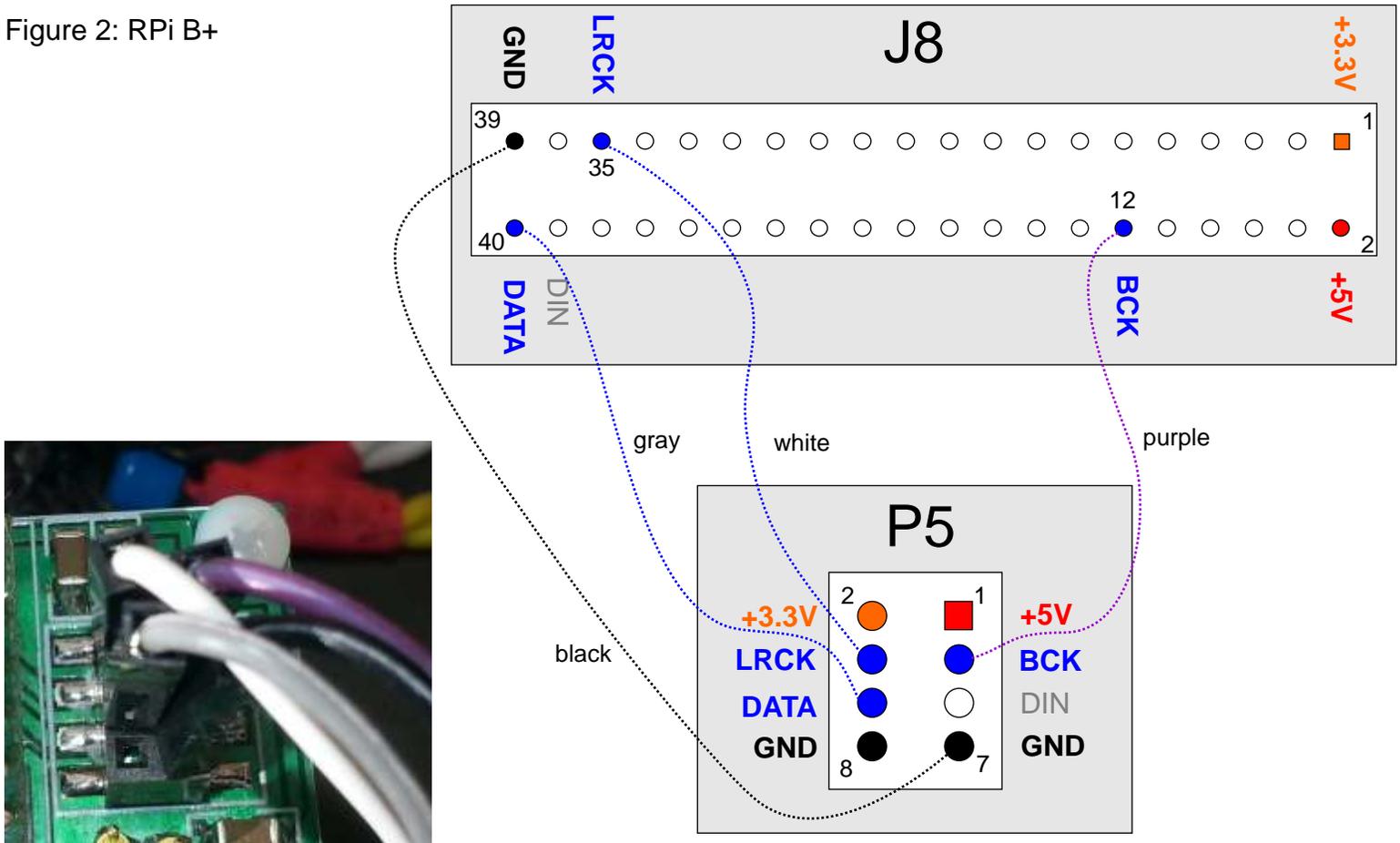
RPi B+ and DAC I2S connector

Figure 2: RPi B+

Figure 3: RPi B or RPi-DAC I2S (P5)

B+ J8			B, DAC, P5	
12	BCK	→	BCK	3
35	LRCK	→	LRCK	4
40	DATA	→	DATA	6
39	GND	→	GND	7

tjaekel, 07/2014

Patch the Rasbian Linux Kernel

To get the **I2S working** - even with the latest Rasbian image - the Linux kernel does not support (yet) the new I2S pin layout and pinmux.

You had to **patch the Linux kernel**. In order to do:

1. Unzip the kernel patch file
2. Copy the file **snd-soc-bcm2708-i2s.ko** to the running Raspberry Pi system:
   in order to do so:
   a) make sure this module is not loaded (comment I2S modules in `/etc/modules`)
   b) you can mount a network drive and copy from PC to RPi
   c) copy first to a regular user `pi` directory
3. Copy the file **snd-soc-bcm2708-i2s.ko** on RPi to the final directory:
   a) use `sudo cp` or `sudo -s` to have the permission to overwrite a kernel file
   b) copy to:
   /lib/modules/3.12.22+/kernel/sound/soc/bcm/
4. Configure **/etc/modules** for I2S as before (enable modules for I2S)
5. Reboot RPi and use I2S

Prepare before RPi B+ with Rasbian

An old Rasbian image from a RPi B model does <u>not</u> work on RPi B+.
Best practice is to install a new image. The patch is based on the June 2014 image, **2014-06-20-wheezy-rasbian** .

Install a micro SD card with latest Rasbian image.
Configure via raspi-config for your needs.
Do n<u>ot</u> enable I2S modules: the RPi will **hang** if you try to use I2S **without the patch**.

Copy the patch to this running RPi system.

Await a finally released Rasbian B+ kernel for I2S official support.