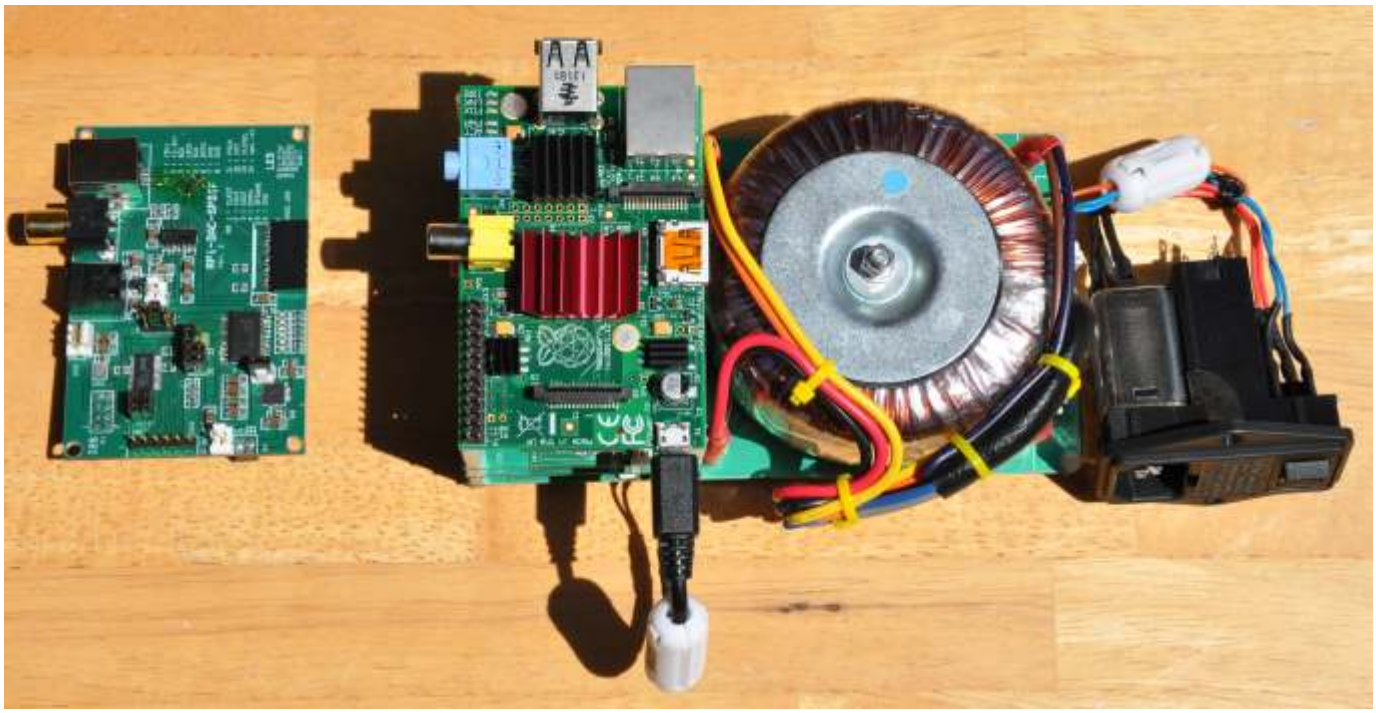
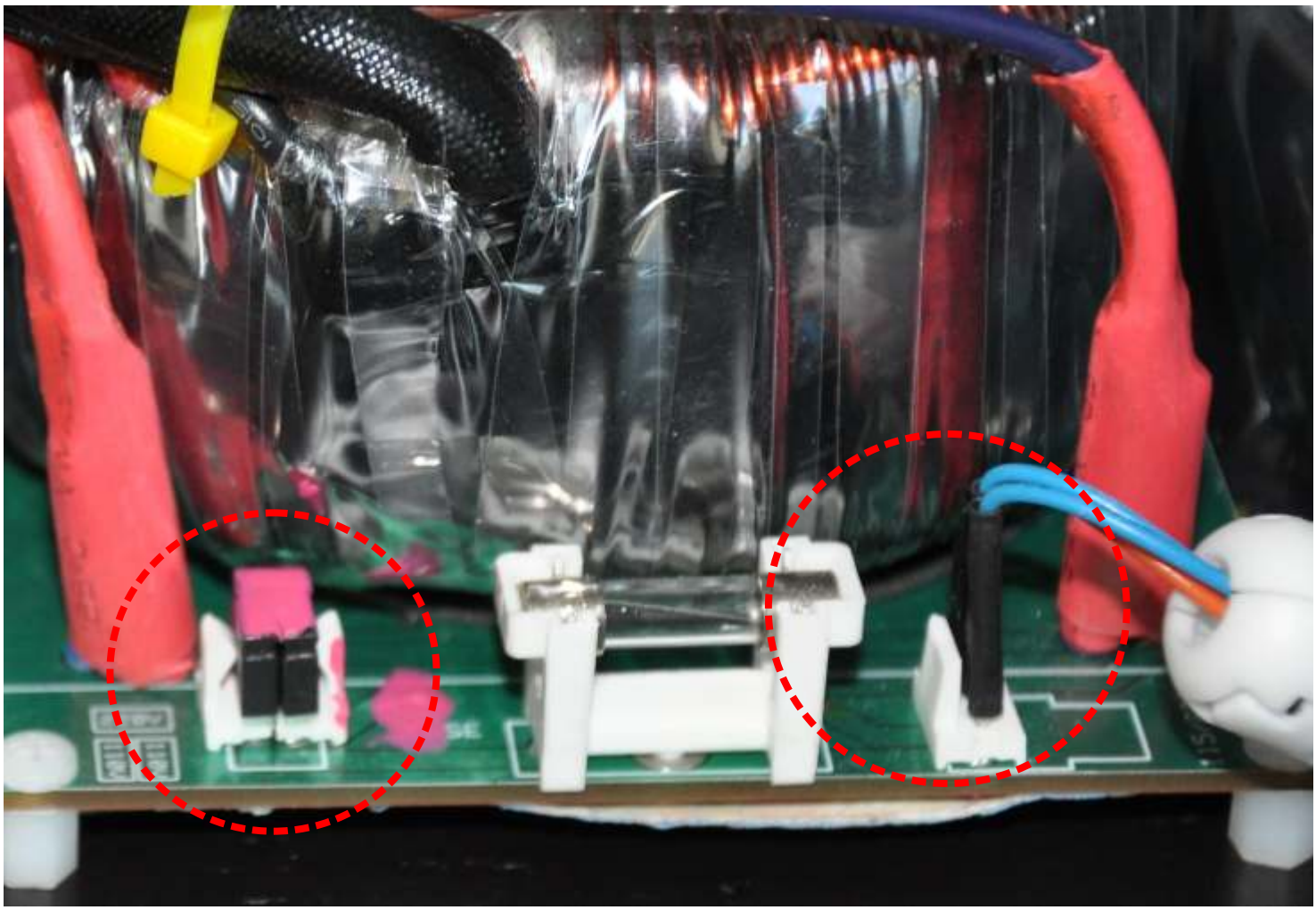
RPi-DAC DualMono
with RPi-DAC-SPDIF option

User Manual
May 2014

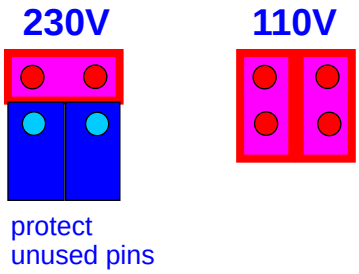


Before powering on

Before you power on the RPi-DAC, please:
- check if head sinks are lose and flying around
- check if power input cables are not damaged or disconnected
- check if voltage selector is correct for your power line voltage (110V or 230V, see picture below)

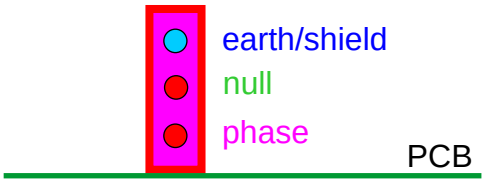


1: Power voltage selector



3: fuse

2: Power input



Safety alert

Please, be carful with the power input module, switch , fuse and wires.

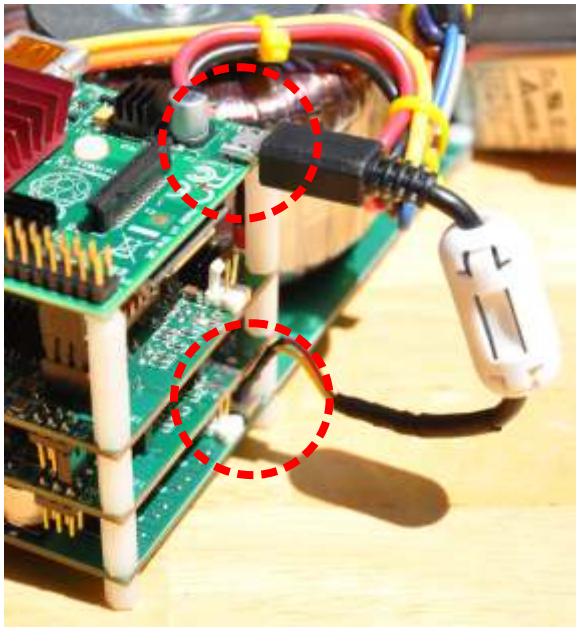
Attention: the PCB has also traces for the high voltage input power and transformer.
Even they are covered by paint and tape - DO NOT TOUCH the PCB.

Operation

The setup comes with two options:
- use *Raspberry Pi* (RPi) as network player and I2S source
- use RPi-DAC-SPDIF module as sound card

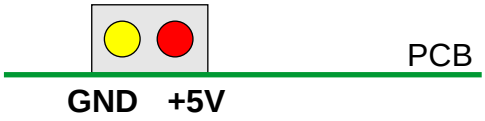
Remark: the Rpi is pre-installed. Please put the USB power cable into the USB plug on RPi before you power on.

RPi-DAC



1: plug in the RPi USB power

2: RPi USB power

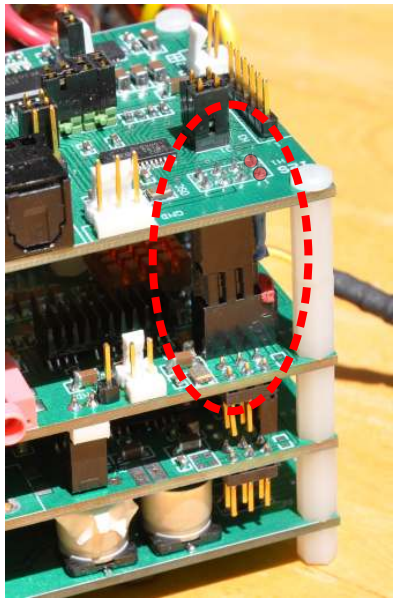


Do NOT connect on any other header

Powering modules with extensions headers

The use of the onboard transformer results in a larger height which makes the plugin of connectors and extension modules a bit difficult.
The setup is intended to be used with an RPi-DAC-FPGA module which is not included and installed.
Therefore extension connectors are used for the RPi-SPDIF module and I2S connector (P5).

RPi-DAC-SPDIF only



I2S extension header

Pin 1 and 2 of RPi-DAC I2S are not used.
Do not connect (3.3V and 5V)..
Make sure when stacking boards: the first row is not used and not connected.
Please see picture how I2C connection should look like.

RPi-DAC

It you power on, LEDs on Rpi are flushing, boot log screen appears on display - all looks fine.
On command line please login with:

user: **pi**
password: **raspberry**

You can start the graphic desktop via:

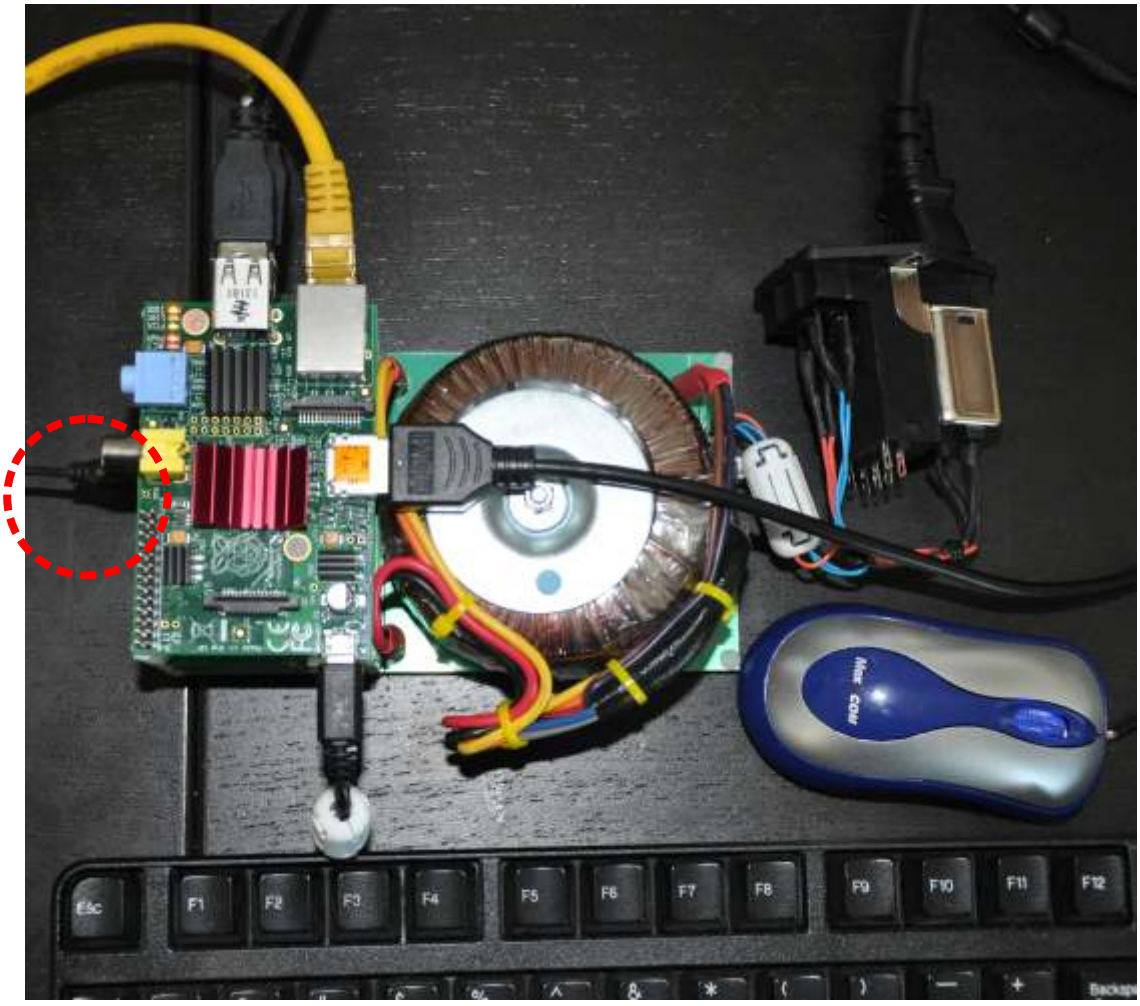
startx

There is VLC installed as audio player. If you open the File menu, there are some audio files to play and an Internet Radio Station playlist file. You can test the audio with it.

Remark:
The RPi is pre-configured for the keyboard used during testing (US).
Potentially, you have to change your local time, keyboard etc. with

raspi-config

on the command line.



headphone out
at the pink 3.5mm
connector,
on the upper
RPi-DAC board

If you want to connect
a power amp:
use a 3.5mm to RCA
cable

RPi-DAC-SPDIF

The RPi-DAC-SPDIF module will substitute the RPi. It will turn the RPi-DAC into a regular soundcard.
The RPi-DAC-SPDIF module provide the following features:
- you can use S/PDIF electrical as input
- you can use TOSLINK optical as input
- you could use USB as input if an optional (not included)
  XMOS USB module is connected on extension header

Remark:
Due to the use of DIR9001 receiver, the max. sample rate is 96KHz. All formats have to be with 24bit.

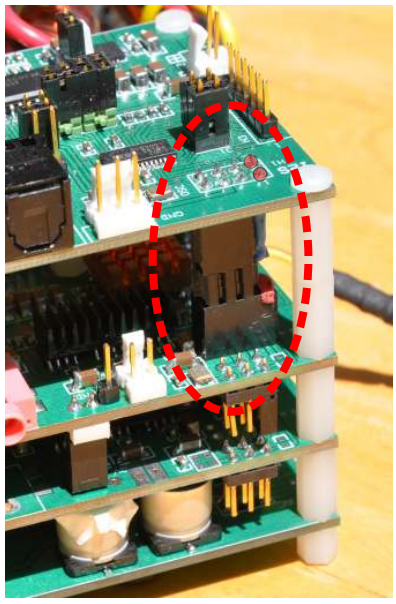
The selection of the active input has to be done via jumpers (see picture).

The RPi USB power cable is not used.

Change to use RPi-DAC-SPDIF

In order to change to use the RPi-DAC-SPDIF:
- remove the screws on Rpi and dismount the Rpi
- plug in the RPi-DAC-SPDIF module
- be carful with the connectors:
- make sure the power extension header is connected properly
- make sure the I2S connector is placed properly: pin 1 and 2 are not used!

RPi-DAC-SPDIF only

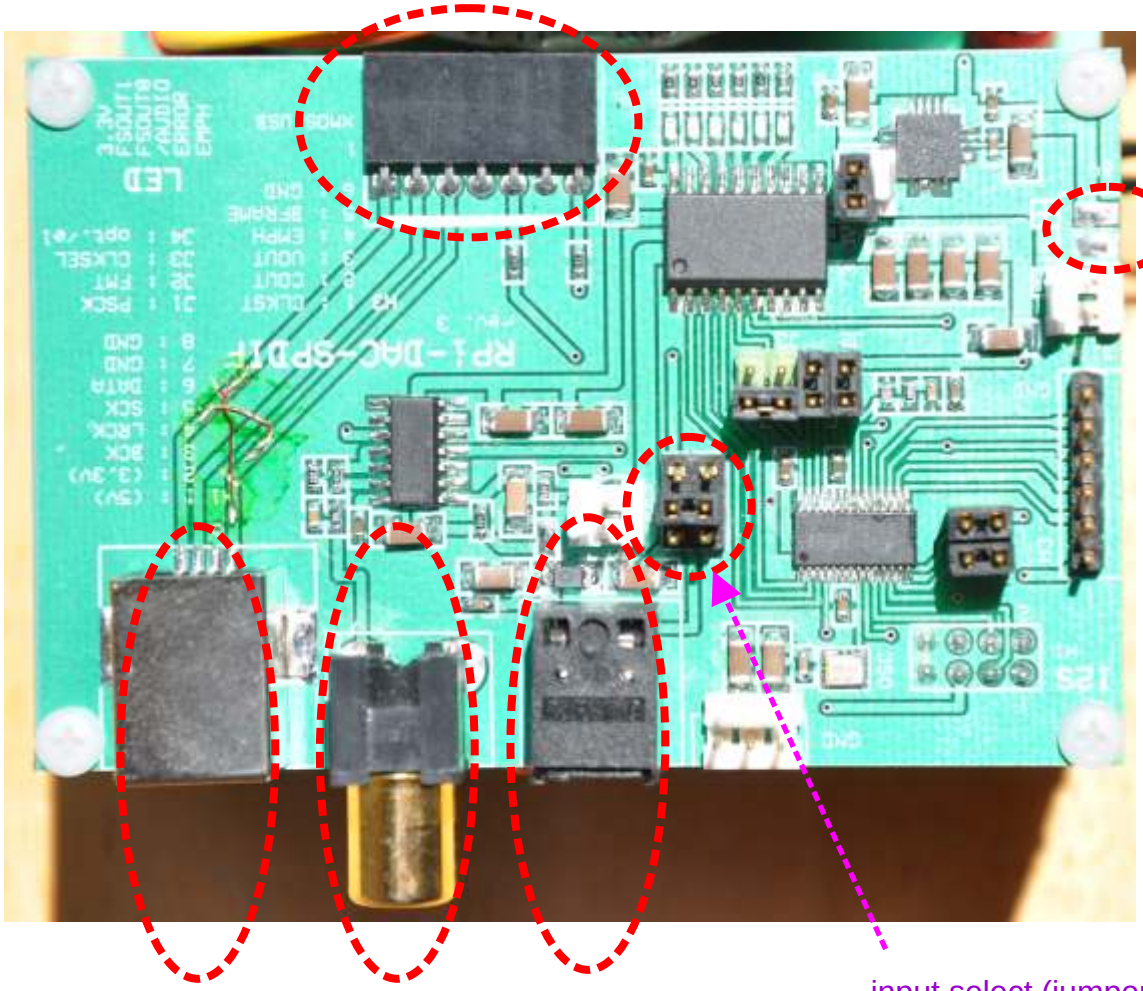


I2S extension header
(RPi-DAC and RPi-DAC-SPDIF)

Pin 1 and 2 of RPi-DAC I2S are not used.
Do not connect.
Make sure when stacking boards, that the first row is not used and not connected.
Please see picture how I2C connection should look like.

RPi-DAC-SPDIF

XMOS USB extension header



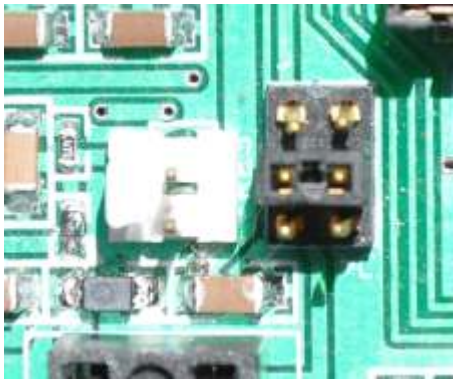
5V (from bottom PCB)

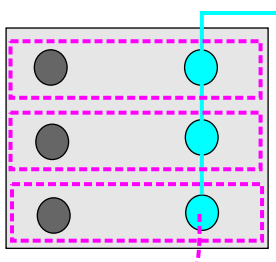
USB for XMOS USB

S/PDIF (electr.)

TOSLINK (opt.)

input select (jumper)
S/PDIF (electr. shown)





Pictures