Interface S88 Gleisbox Raspberry Pi Manual

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1 Introduction

System for controlling a marklin track using a rpi

2 Setup of the Raspberry Pi

t.b.d.

2.1 Shutdown Button

A button can be connected to the system to simplify the process of shutting the system down. First of all, a pushbutton must be connected between GPIO3 (header pin 5) and GND (e.g. header pin 6).

Next, the following script must be installed:

```
git clone https://github.com/Howchoo/pi-power-button.git
```

```
./pi-power-button/script/install
```

Uninstalling the script can be done via:

```
./pi-power-button/script/uninstall
```

Note: warning about pull-up resistor can be neglected.

3 Setup of CAN-interface

t.b.d.

3.1 Connection Scheme

The CAN-bus shall be connected to the Gleisbox as depicted in figure 1. The pin 1 (power supply) does not have to be connected.

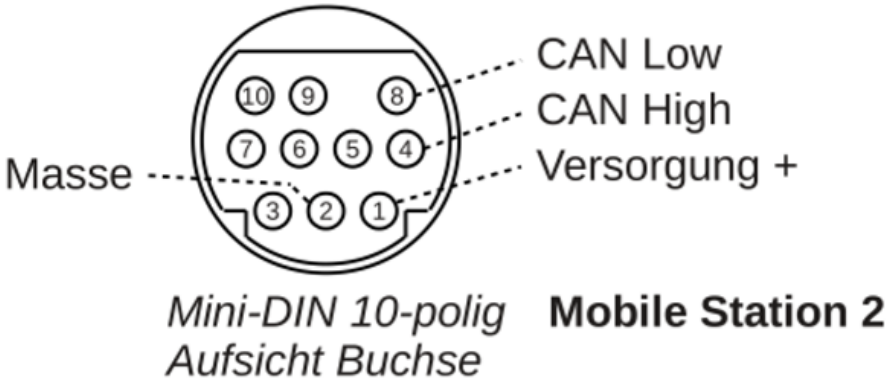

Figure 1: Pinout canbus.

3.2 Oscillator Settings

sudo ip link set can0 up type can bitrate 250000

3.3 Rocrail Server Settings

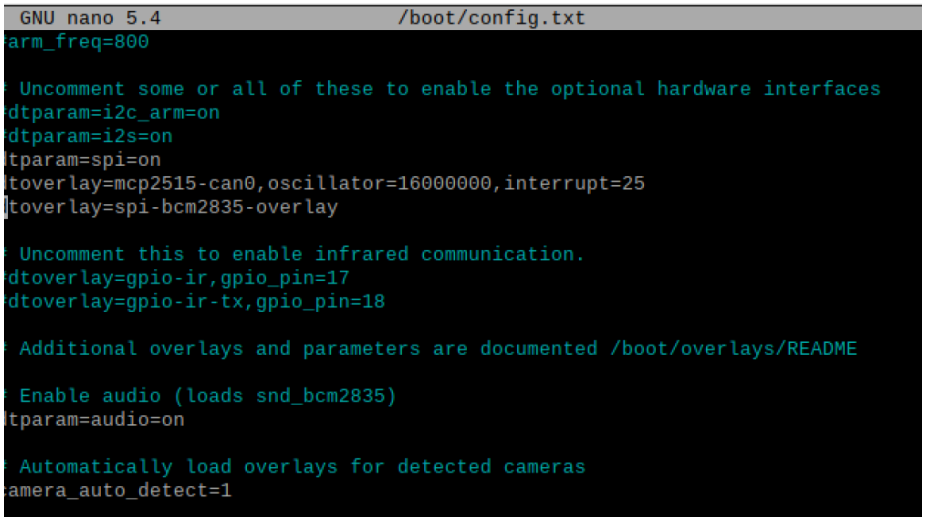

Figure 2: Pi Oscillator settings.

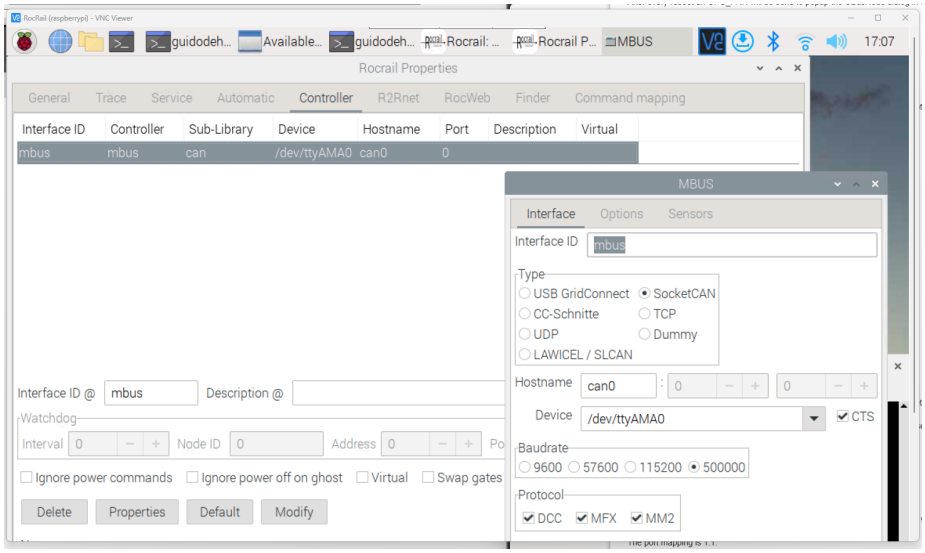

Figure 3: rocrailServerSettings.

4 Setup of S88n-interface

t.b.d.

Table 1: S88N pinout and description.

RJ45 pin	Colour in UTP cable	S88N Description
1	Orange-white	+5V (+12V not in this board)
2	Orange	Data
3	Green-white	GND
4	Blue	Clock
5	Blue-white	GND
6	Green	Load
7	Brown-white	Reset
8	Brown	Rail signal (not used in this design)

4.1 Connection Scheme

4.2 S88UDP installation

Using updated version from Gbert (original version from Siggi).
Install (to prevent pcap.h compilation error):
sudo apt-get install zlib1g-dev libpcap-dev
Download and install S88ÚDP-rpi:
cd git clone https://github.com/GBert/railroad cd railroad/can2udp/src make
To start the interface:
sudo ./s88udp-rpi -v -f -c "17,22,23,24" -m 1
Arguments behind option -c are the gpio ports. The amount of S88 modules is set using option -m.
To test if the udp ports are assigned for use by Rocrail: sudo netstat -autpn — egrep "Proto—157"
The PID "Rocrail" should be displayed.
http://www.airspayce.com/mikem/bcm2835/bcm2835-1.63.tar.gz tar zxvf bcm2835-1.63.tar.gz cd bcm2835-1.63

5 PCB Description

todo:
- standard 9v input for S88

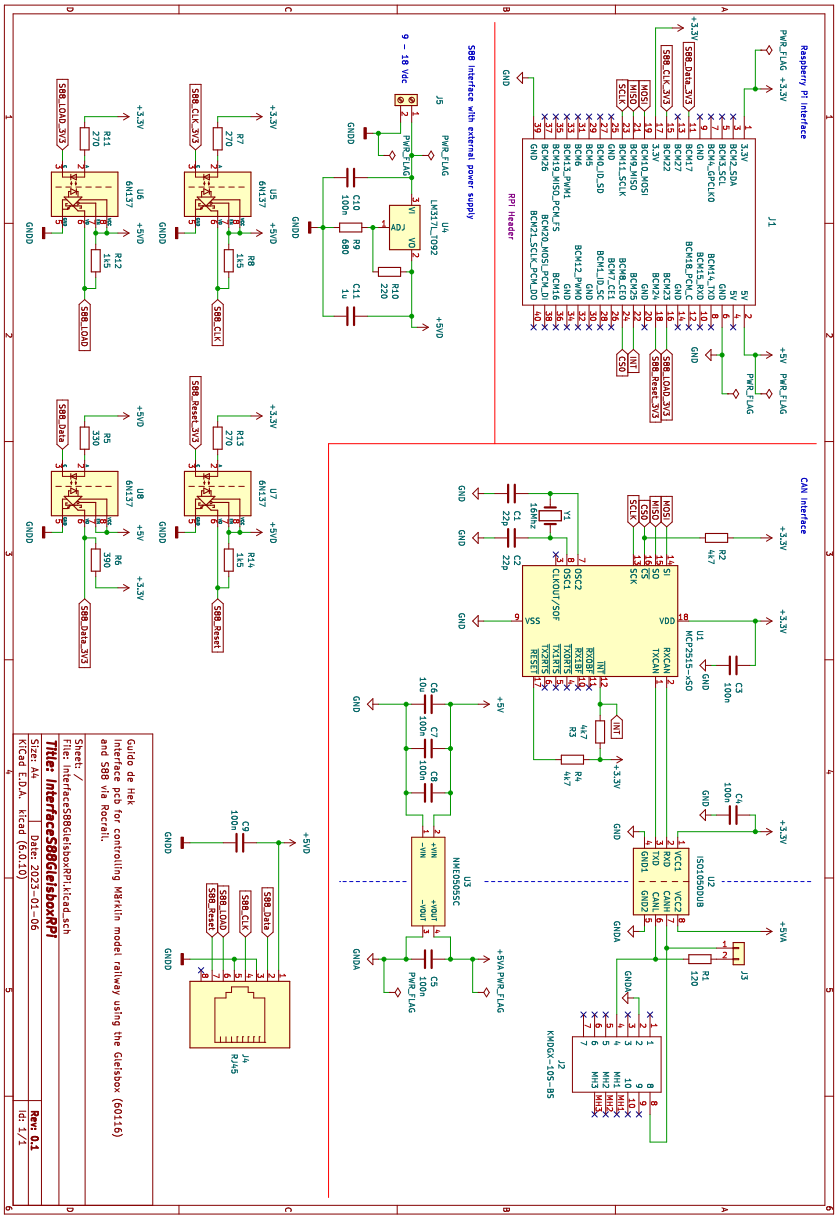

Figure 4: Schematic of the system.