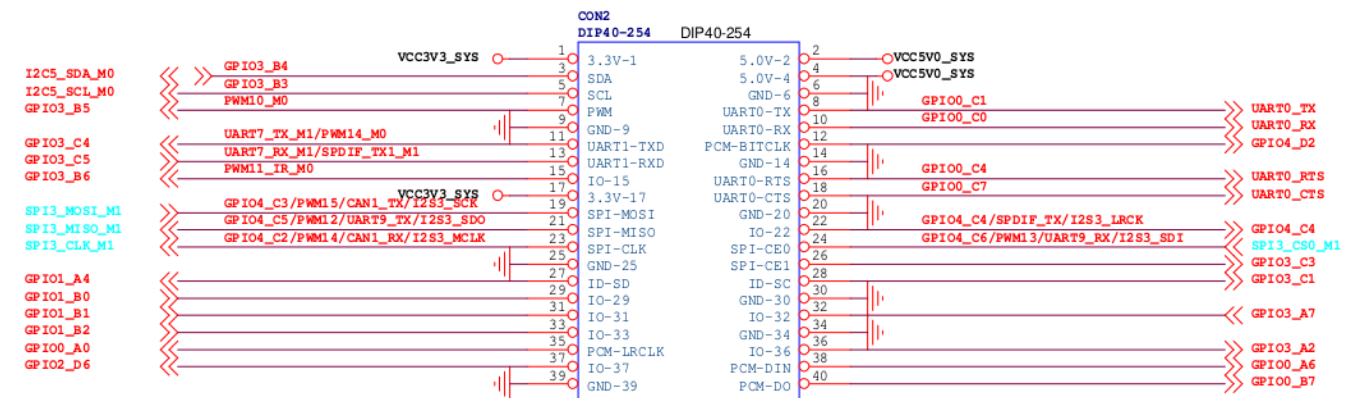










































GPIO



Sparefunction	Mainfunction	pin#	xxxxxxxxxxxxxxxxxxxxxx				pin#	Mainfunction	Sparefunction
-	3V3	1	1			2	2	5V	-
I2C5_SDA M0	GPIO3 B4 (12)	3	3			4	4	5V	-
I2C5_SCL M0	GPIO3 B3 (11)	5	5			6	6	GND	-
PWM10	GPIO3 B5 (13)	7	7			8	8	GPIO0 C1 (17)	UART0 TX
-	GND	9	9			10	10	GPIO0 C0 (16)	UART0 RX
UART7 TX	GPIO3 C4 (20)	11	11			12	12	GPIO4 D2 (26)	
UART7 RX	GPIO3 C5 (21)	13	13			14	14	GND	-
PWM11	GPIO3 B6 (14)	15	15			16	16	GPIO0 C4 (20)	UART0 RTS
-	3V3	17	17			18	18	GPIO0 C7 (23)	UART0 CTS
SPI3_MO, PWM15	GPIO4 C3 (19)	19	19			20	20	GND	-
SPI3_MI, PWM12, UART9 TX	GPIO4 C5 (21)	21	21			22	22	GPIO4 C4 (20)	SPDIF TX
SPI3_CK, PWM14	GPIO4 C2 (18)	23	23			24	24	GPIO4 C6 (22)	PWM13, UART9 RX
-	GND	25	25			26	26	GPIO3 C3 (19)	
	GPIO1 A4 (4)	27	27			28	28	GPIO3 C1 (17)	
	GPIO1 B0 (8)	29	29			30	30	GND	-
	GPIO1 B1 (9)	31	31			32	32	GPIO3 A7 (7)	
	GPIO1 B2 (10)	33	33			34	34	GND	-
	GPIO0 A0 (0)	35	35			36	36	GPIO3 A2 (2)	
	GPIO2 D6 (30)	37	37			38	38	GPIO0 A6 (6)	
-	GND	39	39			40	40	GPIO0 B7 (15)	

There are four gpio controllers (gpio0-3) with four banks (A-D) of 8 gpios each (0-7).

<https://elixir.bootlin.com/linux/latest/source/include/dt-bindings/pinctrl/rockchip.h>

PWM 10-15 / UART 0+7+9 / I2C5 / SPI3 have to be enabled in dts

gpiolib

<https://embeddedbits.org/new-linux-kernel-gpio-user-space-interface/>

```
apt install gpiod
```

Gpioset only sets gpio while running, so run with wait and press ctrl+z to stop process (running bg will end it and reset gpio)

This will set gpio 6 on first controller (0):

```
# gpioset -m wait 0 6=1  
^Z[1]+ Stopped
```

pwm

[PWM \(bpi-r2\)](#)

each pwm enabled gets its own pwmchip-node where it can be enabled with „echo 0“

if the pwms of fan (8) and all on gpio header enabled (10-15) we get /sys/class/pwm/pwmchip0 - 6

example for pwm10 (pin 7) with 1 Hz blinking (values for period and duty_cycle in ns)

```
# echo 0 > /sys/class/pwm/pwmchip1/export  
# echo 1000000000 > /sys/class/pwm/pwmchip1/pwm0/period  
# echo 500000000 > /sys/class/pwm/pwmchip1/pwm0/duty_cycle  
# echo 1 > /sys/class/pwm/pwmchip1/pwm0/enable
```

thermal

```
root@bpi-r2pro:~# cat /sys/class/thermal/thermal_zone0/type  
cpu-thermal  
root@bpi-r2pro:~# cat /sys/class/thermal/thermal_zone0/temp  
43125  
root@bpi-r2pro:~# cat /sys/class/thermal/thermal_zone1/type  
gpu-thermal  
root@bpi-r2pro:~# cat /sys/class/thermal/thermal_zone1/temp  
43750
```

saradc

```
cat /sys/devices/platform/fe720000.saradc/iio:device0/in_voltage2_raw
```

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<https://www.fw-web.de/dokuwiki/> - **FW-WEB Wiki**

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Last update: **2023/06/08 17:06**

