Sound

Raspberry Pi Stereo Jack

PWM0_OUT 1 R21 270R 2 PWM0_R 2 C48 10u 1 LOUT_R PA-5/013

C20 33n R20 150R

PWM1_OUT 1 R27 270R 2 PWM1_L 2 C34 10u 1 D12 BAV99 ka D13 BAV99 ka LOUT_L S6

C26 33n R26 150R

+3V3 k2 k2

a1 a1 a1
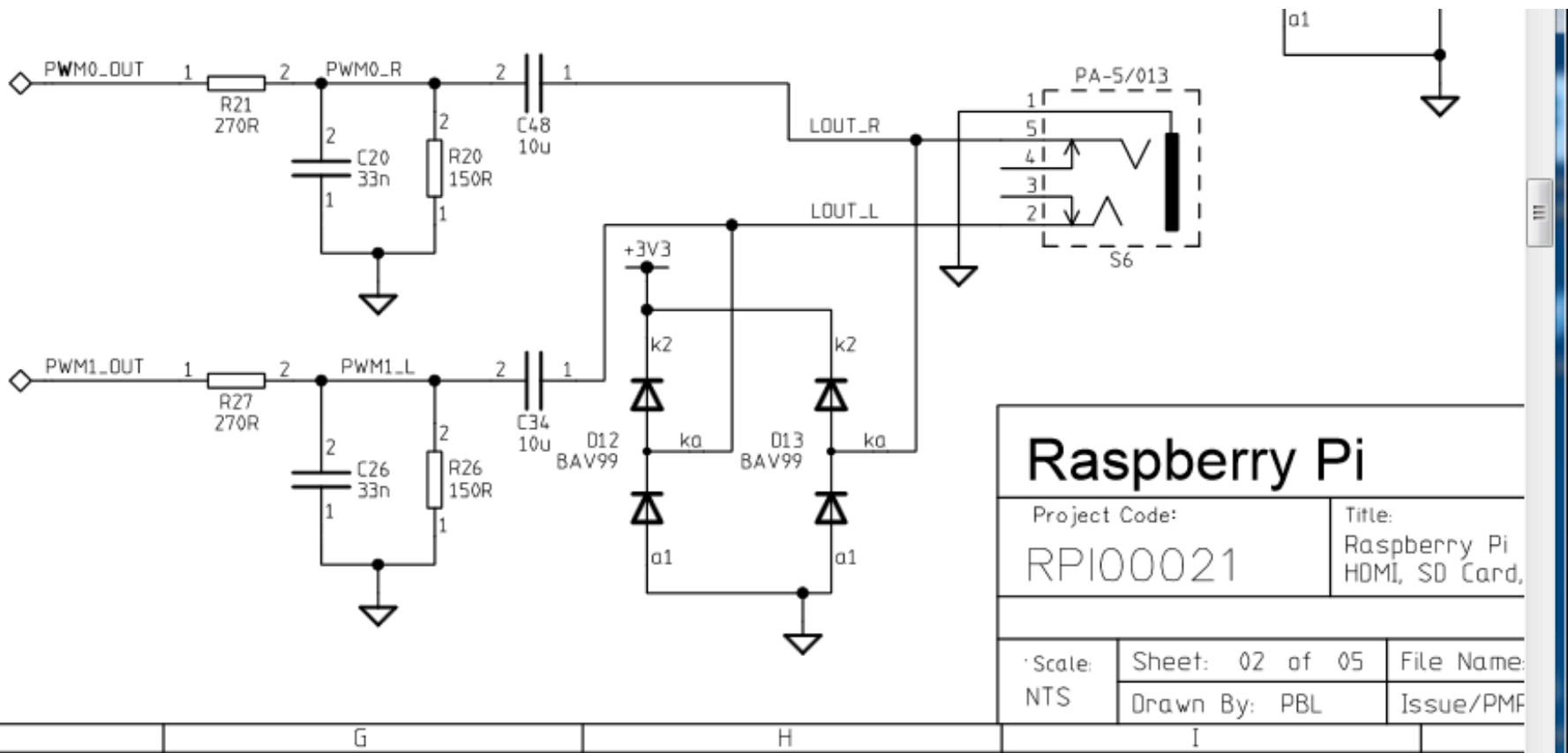
Raspberry Pi

Project Code:	Title:
RPI00021	Raspberry Pi HDMI, SD Card,

Scale:	Sheet: 02 of 05	File Name:
NTS	Drawn By: PBL	Issue/PMP

G | H | I

	PWM0	PWM1
GPIO 12	Alt Fun 0	-
GPIO 13	-	Alt Fun 0
GPIO 18	Alt Fun 5	-
GPIO 19	-	Alt Fun 5
GPIO 40	Alt Fun 0	-
GPIO 41	-	Alt Fun 0
GPIO 45	-	Alt Fun 0
GPIO 52	Alt Fun 1	-
GPIO 53	-	Alt Fun 1

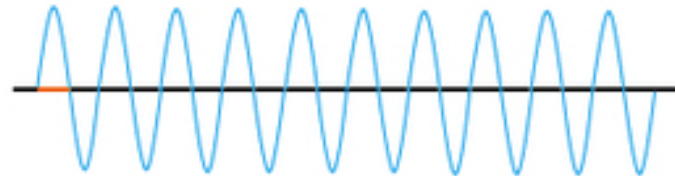# Stereo Jack connected to GPIO_PIN40 and GPIO_PIN45

Sound Waves

Lower Pitch
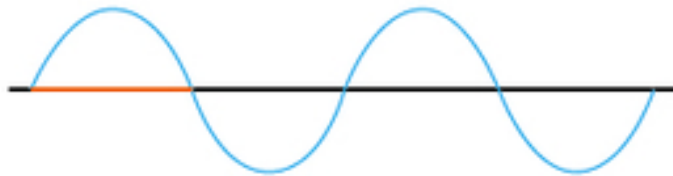
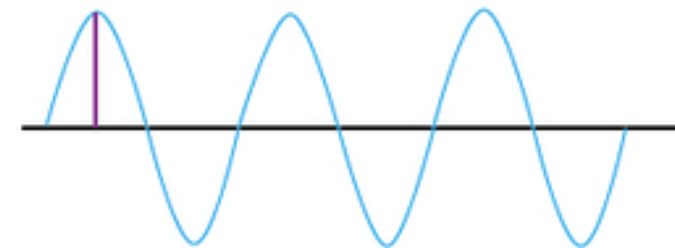Higher Pitch

Low Frequency
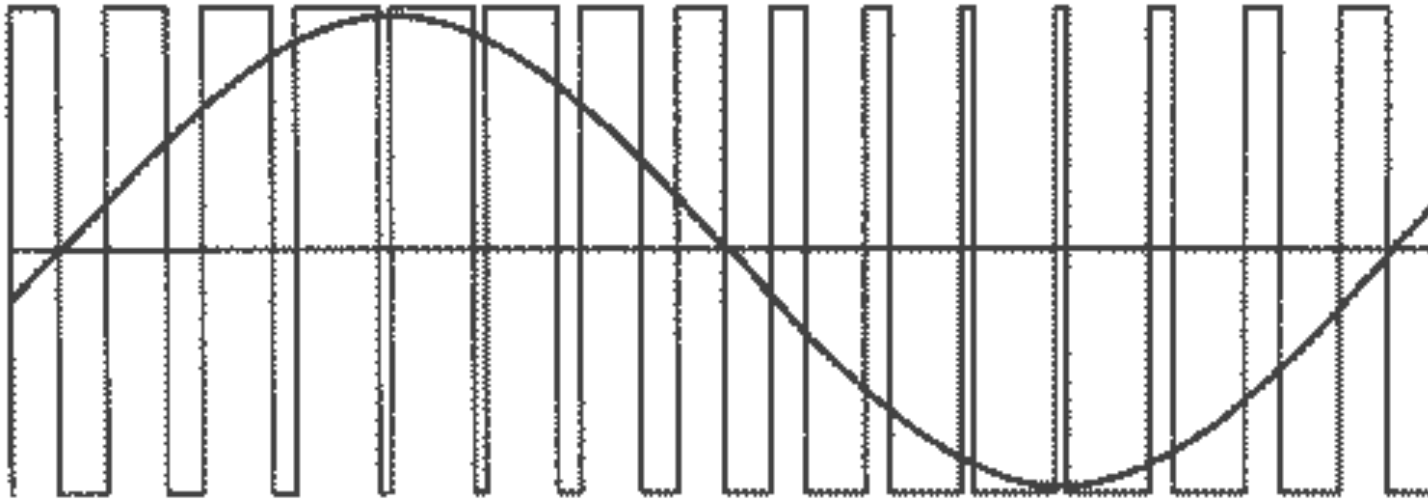
High Frequency

Quieter

Louder

Low Amplitude

High Amplitude

Continuous Values

Can simulate continuous values with fast enough PWM clocking

Like you did to control the LED brightness

Pulse-Width Modulation (PWM)

50% duty cycle

75% duty cycle

25% duty cycle

`pwm_clock, pwm_range, pwm_width`

`pwm.c`

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GPIO 18	Alt Fun 5	-
GPIO 19	-	Alt Fun 5
GPIO 40	Alt Fun 0	-
GPIO 41	-	Alt Fun 0
GPIO 45	-	Alt Fun 0
GPIO 52	Alt Fun 1	-
GPIO 53	-	Alt Fun 1

PWM0 is output on GPIO_PIN18 ALT_FUN5

```
pwm.c
tone.c
melody.c
```

audio.c