

Sound

Pulse-Width Modulation (PWM)

50% duty cycle



75% duty cycle



25% duty cycle



`pwm_clock`, `pwm_range`, `pwm_width`

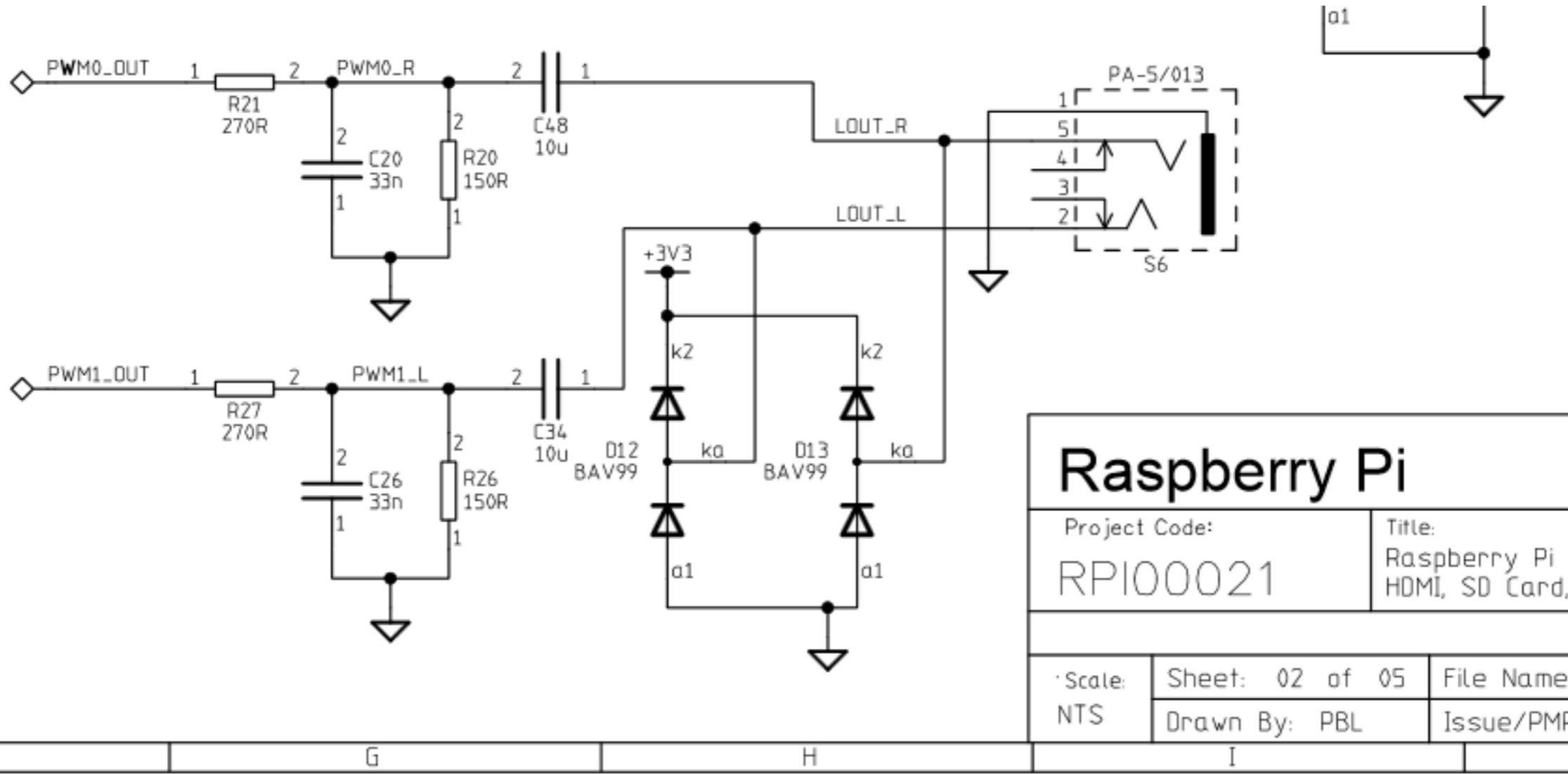
`pwm.c`

| | 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 |

PWM0 is output on GPIO_PIN18 ALT_FUN5

pwm.c
tone.c
melody.c

Raspberry Pi Stereo Jack



Raspberry Pi

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

| | | |
|--------|-----------------|------------|
| Scale: | Sheet: 02 of 05 | File Name: |
| NTS | Drawn By: PBL | Issue/PMF |

G

H

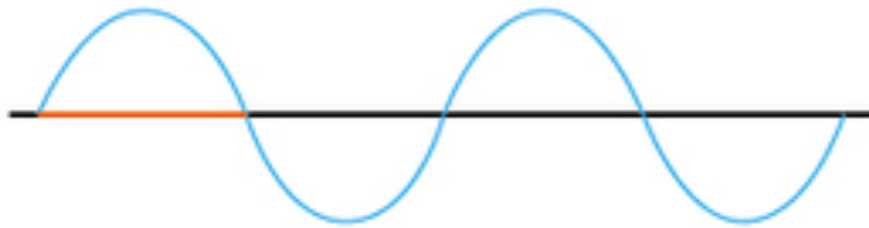
I

| | 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**

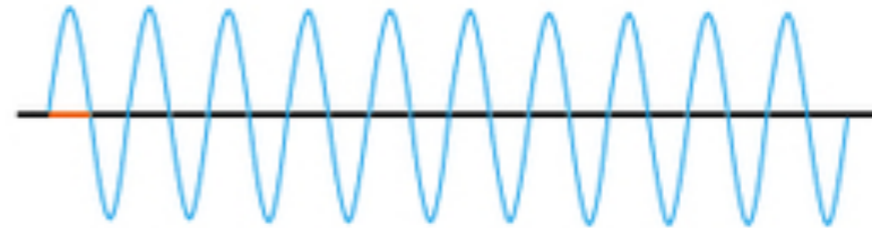
Sound Waves

Lower Pitch



Low Frequency

Higher Pitch



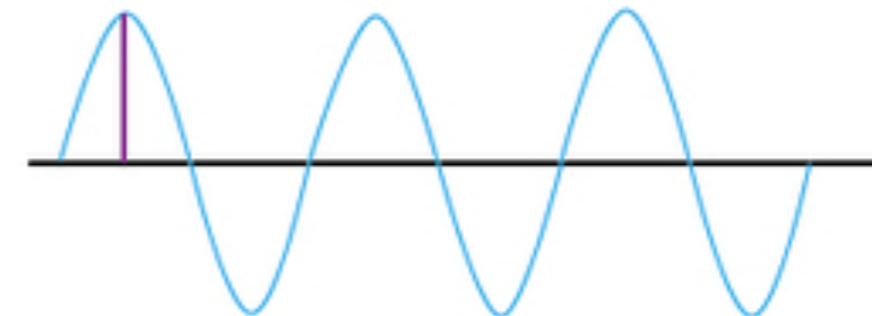
High Frequency

Quieter



Low Amplitude

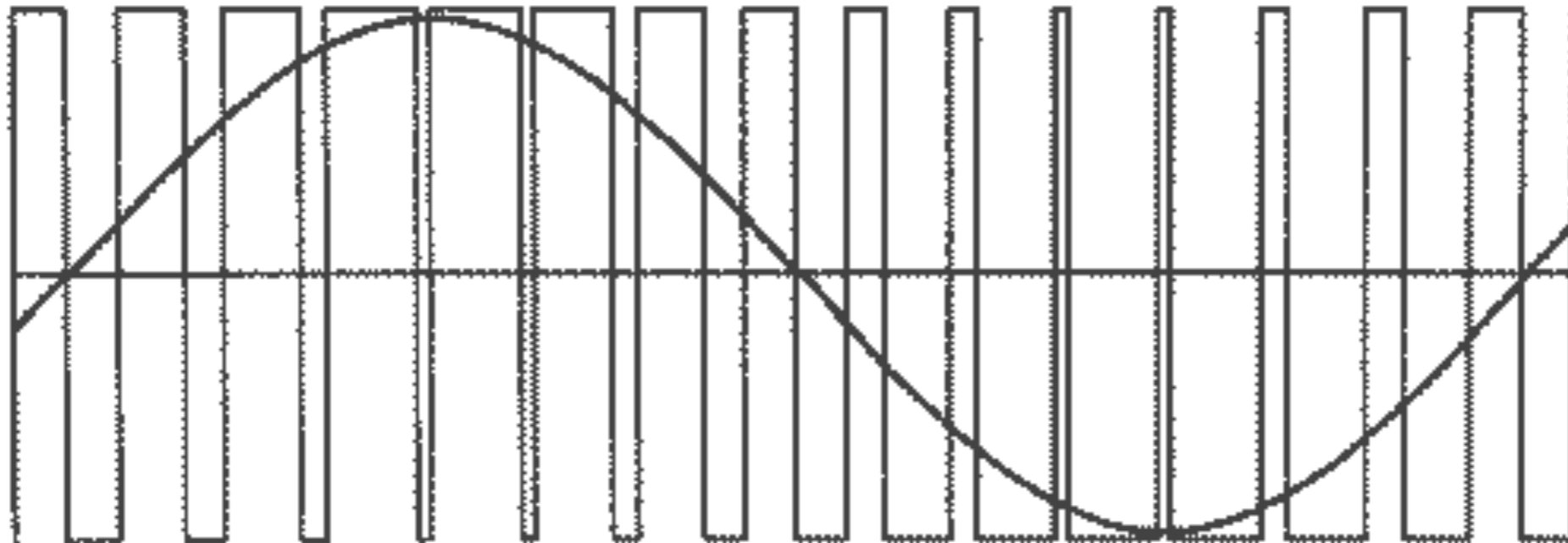
Louder



High Amplitude

Continuous Values

Can simulate continuous values with fast enough PWM clocking



Like you did to control the LED brightness

audio.c