



PrinterPiano



sui77

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Summary

This tiny keyboard will turn your 3d printer into a music instrument.

[Gadgets](#) > [Other Gadgets](#)

PrinterPiano

Turn your 3d printer into a music instrument and let the axis movements be music in your ears - literally!

This tiny keyboard controls your 3d printer through WiFi via [OctoPrint](#) API. It either utilizes the printers buzzer by sending [M300 Play Tone](#) commands or, moves your X-carriage or Y-print bed using [G0 Linear Move](#) G-codes with variable feed rates to create the right pitches.

Updates:

2023/05/06 - Reworked all stl files, hidden bolts, better printable without any support & easier assembly. Updated PCB layout. Added a build video.

BOM

Quantity	Name	Comment
1x	PrinterPiano PCB	see below
1x	WeMos D1 Mini	esp8266 microcontroller

Quantity	Name	Comment
16x	8x8x5 mm soundles silicone push buttons – or -- 6x6x4.3mm tactile push buttons	Regular push buttons make an annoying loud click noise, so these 8x8x5 soundles ones are better.
4x	resistor 10k	
1x	resistor 100	
4x	diodes	best practice, you can also bridge their footprints with jump wires.
1x	npn transistor	2N3904 for example
1x	passive buzzer / piezo 12mm diameter	To play sounds internally without a printer
2x	M3x20mm bolt and nut	
4x	M3x5mm bolt and nut	To mount the pcb. Optional, should also work without.

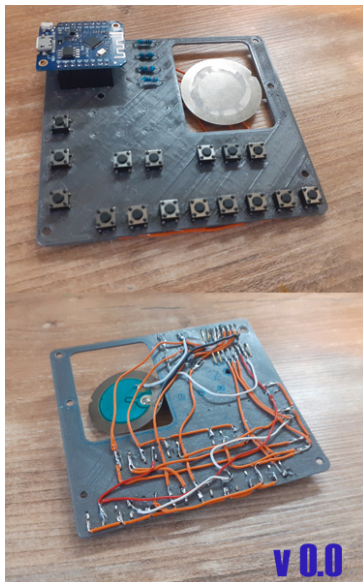
PCB

The PCB design is [open source & available at github](#). It's basically a keypad matrix hooked up to a esp8266 microcontroller. You can download the [fabrication files](#) to order at any prototyping manufacturer (e.g. at [JLCPCB](#) for around 10 bucks)

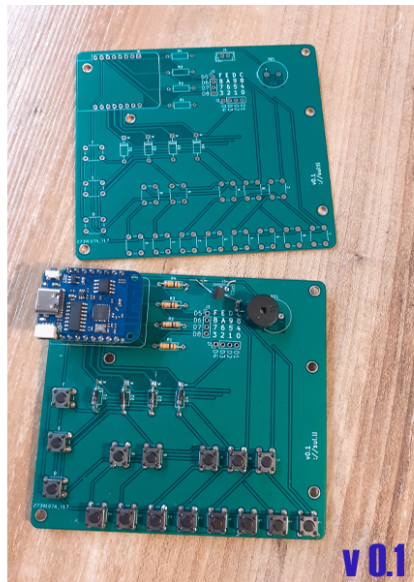
v0.0: Actually hand wired a board that I 3d printed

v0.1: Figured out that some labels were wrong and the buzzer needs a transistor

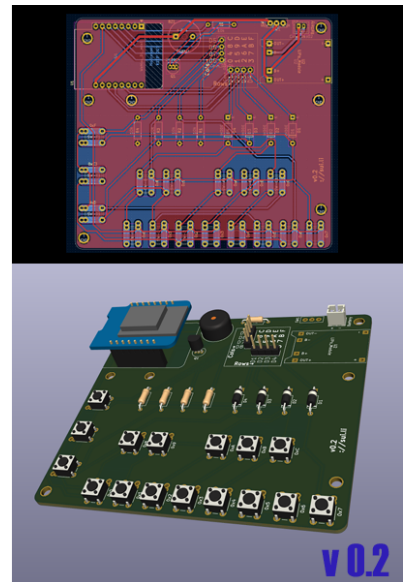
v0.2: Added a spot for an optional battery charger module



v 0.0



v 0.1



v 0.2

Firmware

Find the [Arduino source code on github](#) (work in progress, huge update is coming soon).

You need to add “ESP8266 Boards” with the board manager and the “Adafruit Keypad library”. Edit the WiFi and Octoprint settings in the config section on top.

The first button switches through 5 modes:

- 1: Play with the internal buzzer
- 2: Play with the printers buzzer
- 3: Play with both buzzers
- 4: Play with the X-axis
- 5: Play with the Y-axis

The second and third button switch an octave up or down.

Model files



PrinterPlayer Main STL Files

6 files



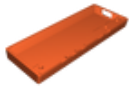
keys-white.stl



keys-black.stl



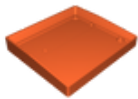
buttons.stl



top.stl



middle.stl

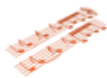


bottom.stl



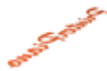
Decorations

2 files



decoration_music.stl

☐ Print top.stl on top of this if you like.



decoration_printerpiano.stl

☐ Print top.stl on top of this if you like.



PCB mockups

2 files



pcb_mockup.stl



pcb_prototype.stl

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