

# Phoniebox - DIY Jukebox

Here is a collection of notes, guides, and photos documenting the process of building a Phoniebox for our son.

This was a collaborative effort, and we'd like to express our thanks to everyone who contributed.

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# Photos

Here are some photos of the finished Phoniebox.

## Front



## Top



Site (right)



Site (left)



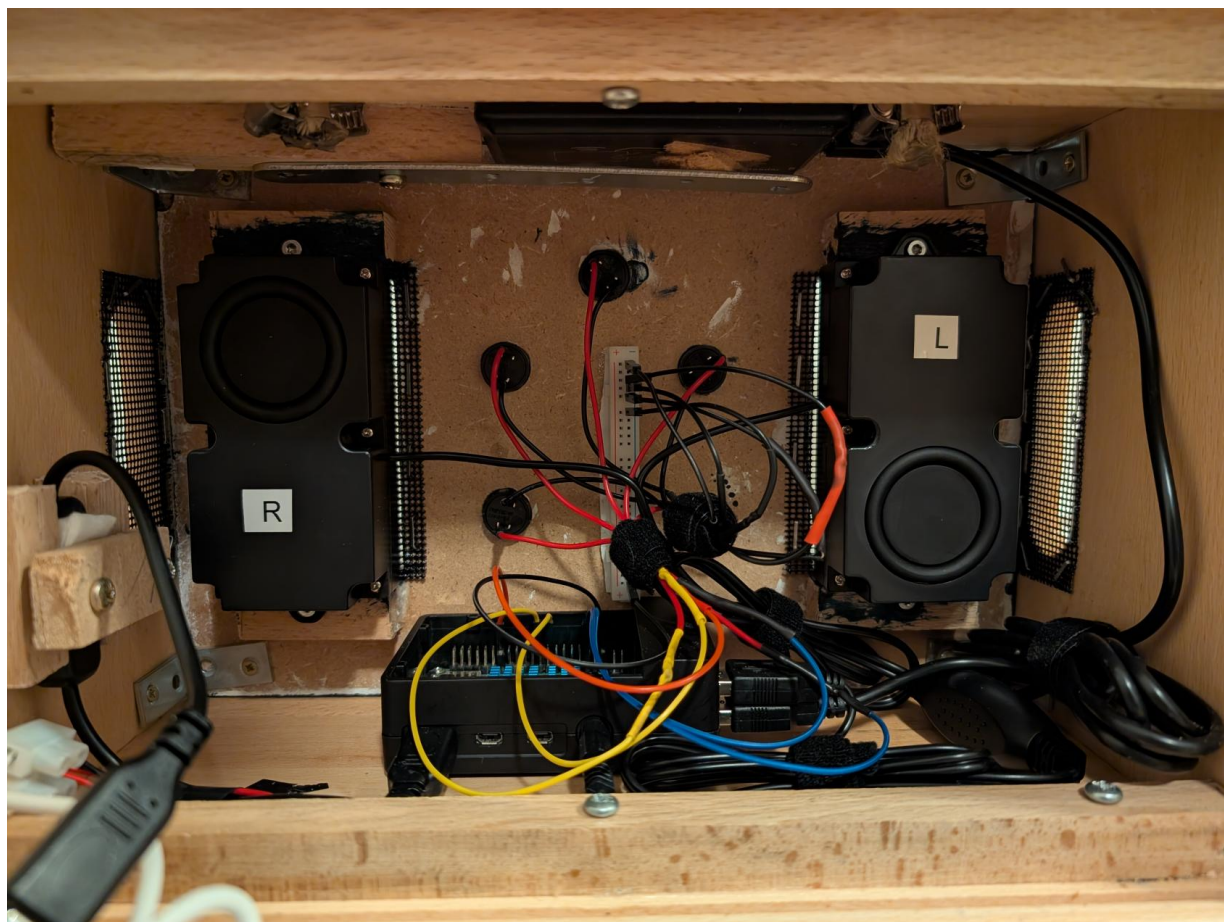
Back



Inside







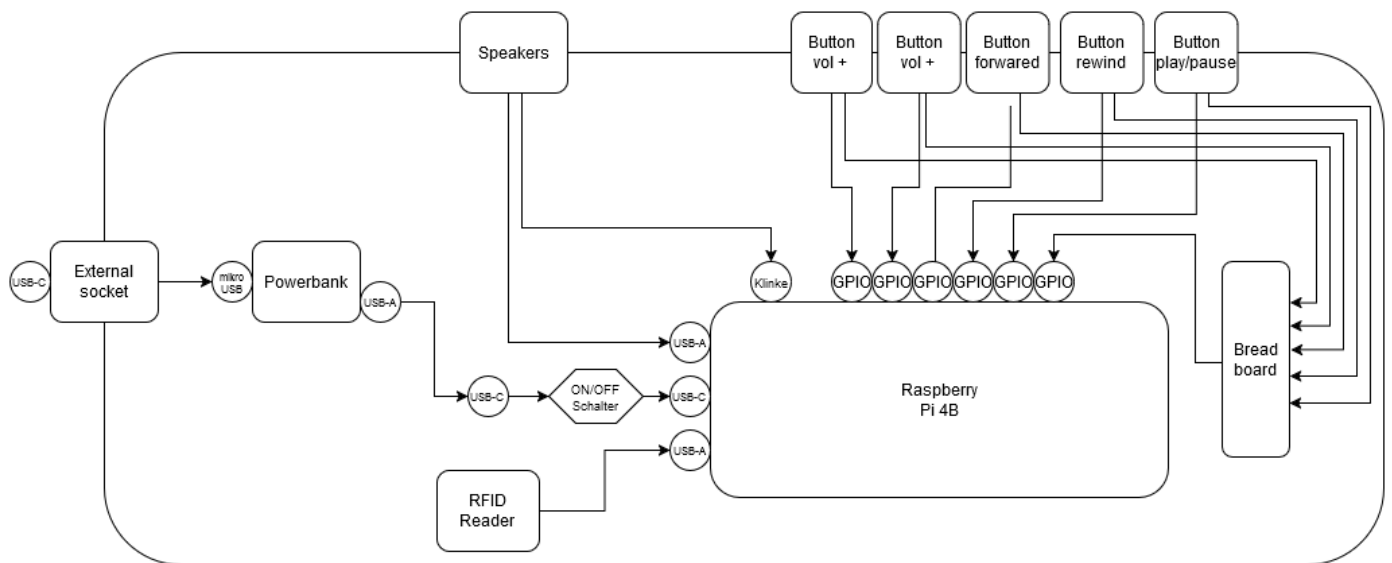


# Hardware

Here is a overview about all the hardware used to build Phoniebox.

The price we paid for materials we did not already own is in displayed **square brackets** behind the materials.

Rough diagram how everything should be connected:



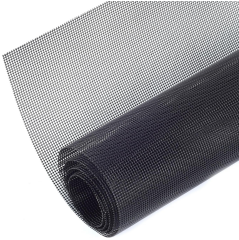
## Case

- Wodden box [12€]



- 30 x 20 x 15 cm
- 1,3 kg
- glazed surface
- Wodden boards (top and bottom)
- Rope
- Wodden strips
- Angle connectors
- Screws

- Stainless Steel Car Grill Mesh Screen [20€ for 100x33]



- Coated 304SS Grid
- 1mm round hole
- Edding (permanent markers) white and black

## Technic

- Raspberry Pi 4 Modell B (4 GB)



- GINTOOYUN USB C Cable with On/Off Button [10€]



- MEIRIYFA Speaker 2.0 [20€]



- USB A powered
- 3.5mm AUX Jack
- power can be turned permantly on
- Neuftech USB RFID Reader (EM4100) [12€ includes 5 chips]



- EMOS Powerbank BetaQ [21€]



- 10,000 mAh
- 22.5 W Quick-Charge
- Charger with Passthrough (important!)
- 2x USB-A and 1x USB-C out
- RUNCCI-YUN USB-C socket [6€ for 6 sockets]



- waterproof
- Rated voltage: DC 5V/9V maximum current: 2.0A
- 12 mm diameter for the hole
- includes nuts
- RUNCCI-YUN Mini Round Momentary Push Button [9€ for 10 buttons]



- Rated voltage and current: AC250V/3A AC125V/6A
- Mounting cut-out: approx. 15.6mm/0.6"; Head Diameter: 19.2mm/0.75"; 2 Ports
- Jumper cable



# Software

We are using Phoniebox as the main software to control and configure the Raspberry Pi.

- Operating system: Rasbian (Bullseye)
  - outdated OS version recommended because of GPIO issues with newer one
- Phoniebox: RPi-Jukebox-RFID (v2)
  - install guide: <https://github.com/MiczFlor/RPi-Jukebox-RFID/wiki/INSTALL>
  - we decided to use v2 mainly because the device should be as stable as possible

After the setup the device can be controlled and configured via web UI.

# Notes

## Improvements

Here are some thoughts I have about updates to the current device or for a version 2:

- add OnOff SHIM as improved power management
- bigger buttons (I was not really thinking about the size when I ordered them)
- make it lighter, the whole thing is pretty heavy and not super easy for a young child to move