

TINY DJ

DH2400 - Physical Interaction Design and Realization

How-to instructable

Emilie Le Moël
Joni Baitar
Tomas Andersson
Jimothy Andersson

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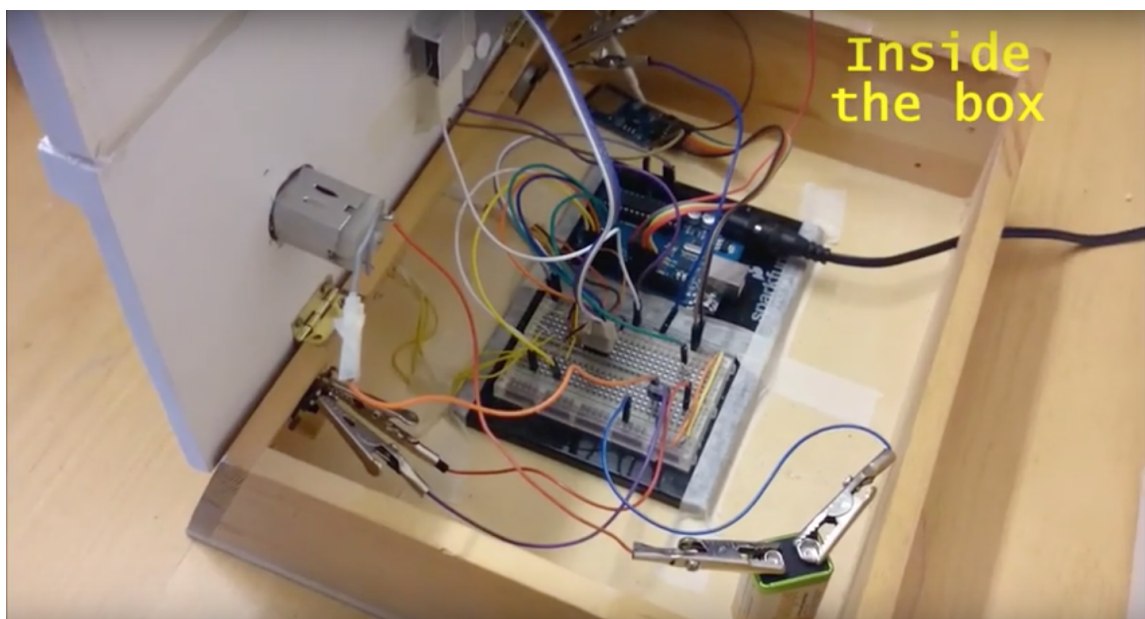


Tiny DJ is a technologically improved toy inspired from the **Tiny Chef** toys. The physical basis is a seventies wooden toy that was used as a tiny kitchen, but you can use any tiny kitchen toy you want in order to build this.

We included 4 main features to this toy :

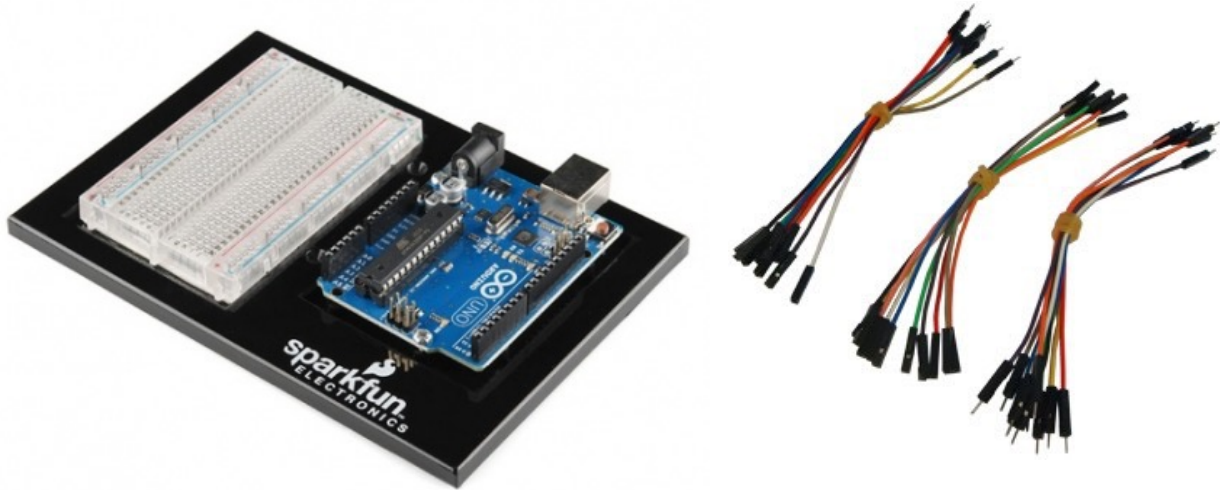
- Start button : plays a random music from a SD card, or change music if it is already on, and start lights and motor.
- Turning knobs : control the volume or control the motor speed.
- LED color control
- LED blinking frequency control

This instructable will give you all the tools to build the circuit for this toy !

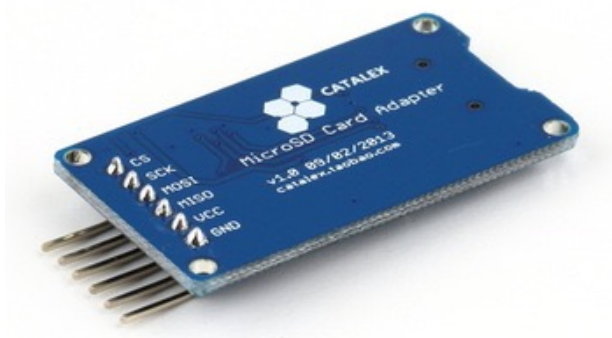


Step 1 : parts

Arduino Uno & breadboard & sets of wires & power supply cable



MicroSD Card Adapter & SD Card (4GB)



8Ω speaker



DC motor



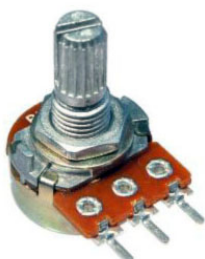
RGB LED



NPN transistor (BD139)



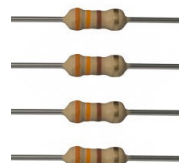
3 potentiometers



2 push-buttons



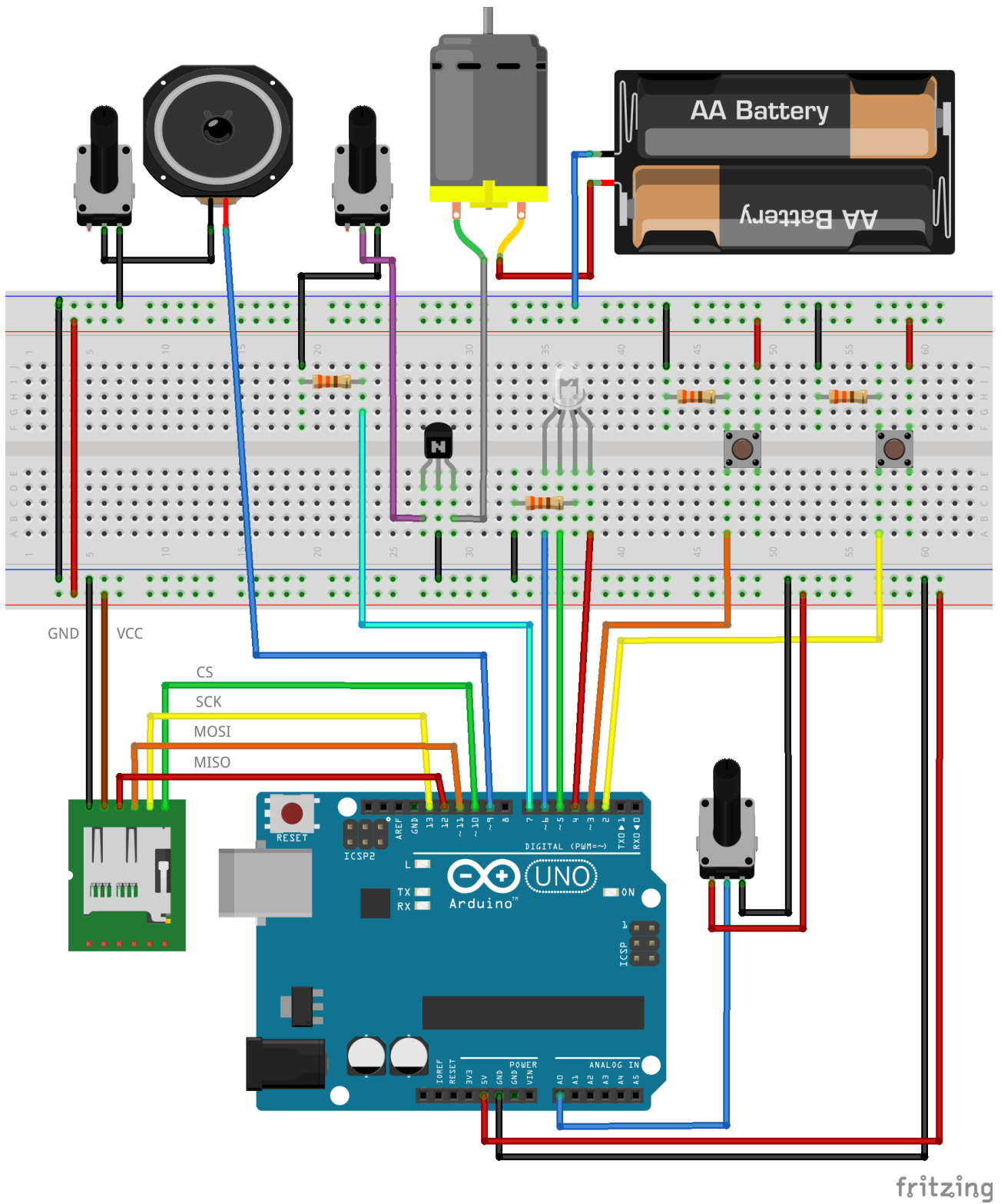
4 resistors 330Ω



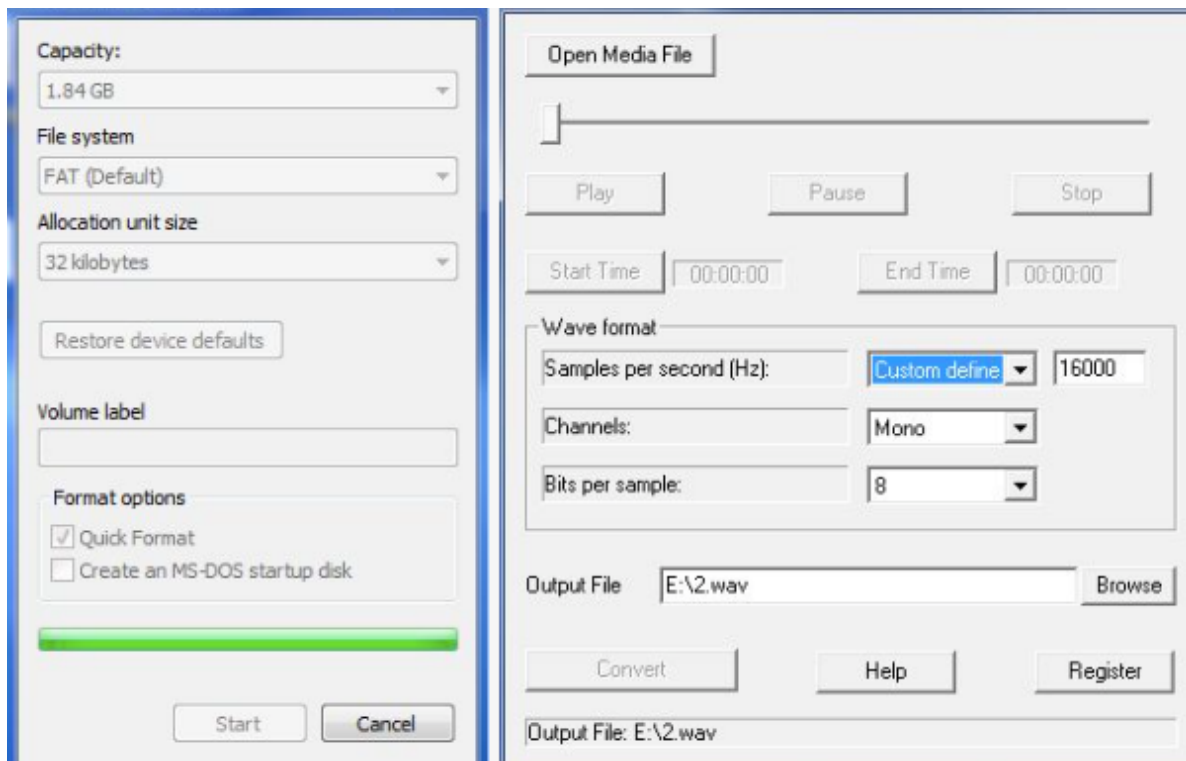
Battery 9V



Step 2 : circuit diagram



Step 3 : SD card & code



1. Format the SD card with the above settings.
2. Convert your musics to .wav files. Warning, if the settings above are not respected, it won't work ! You can use the Wav Sample Rate Converter software. (Some example music files are attached).
3. Install the TMRpcm library. <https://github.com/TMRh20/TMRpcm/wiki> (Simply drag the downloaded folder containing the TMRpcm.h file into the Libraries folder of your Arduino folder).
4. Upload the attached Arduino sketch to your Arduino.
5. Enjoy !