



MozziByte Noob Toot

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BACKGROUND



<https://sonification.com/tag/audiomostly/>

Pros and Cons

- Super cheap !!!! - e.g. \$3
- Small and getting smaller e.g. 10x10mm (Pico, Beetle)
- Low power e.g. 50 mA = 4 days on 5000mAh battery
- Parallel multiplicity and scalability
- Low latency – no Operating System overheads
- With just 16 Mhz, 8 bit integer–Mozzi = 14 oscillators !
- BUT Teensy floating point, TRE Arm Cortex runs linux
- Graphic IDE + online Create editor + command line
- Large Open Source community
- Hundreds of additional libraries
- Hundreds of additional shields

Mozzi

audio synthesis library for Arduino

Hello Arduino

Arduino Create Web Editor <https://create.arduino.cc/>

Install the Plugin <https://create.arduino.cc/getting-started/plugin>

OR Install the Software on your computer so you don't need the internet (Requires reboot)

<https://www.arduino.cc/en/Main/Software>



Plug Pro Micro by USB cable to your laptop.

For more info about Pro Micro see

<https://www.sparkfun.com/products/12640>

Select the Board

Tools → **Board** → **Leonardo**

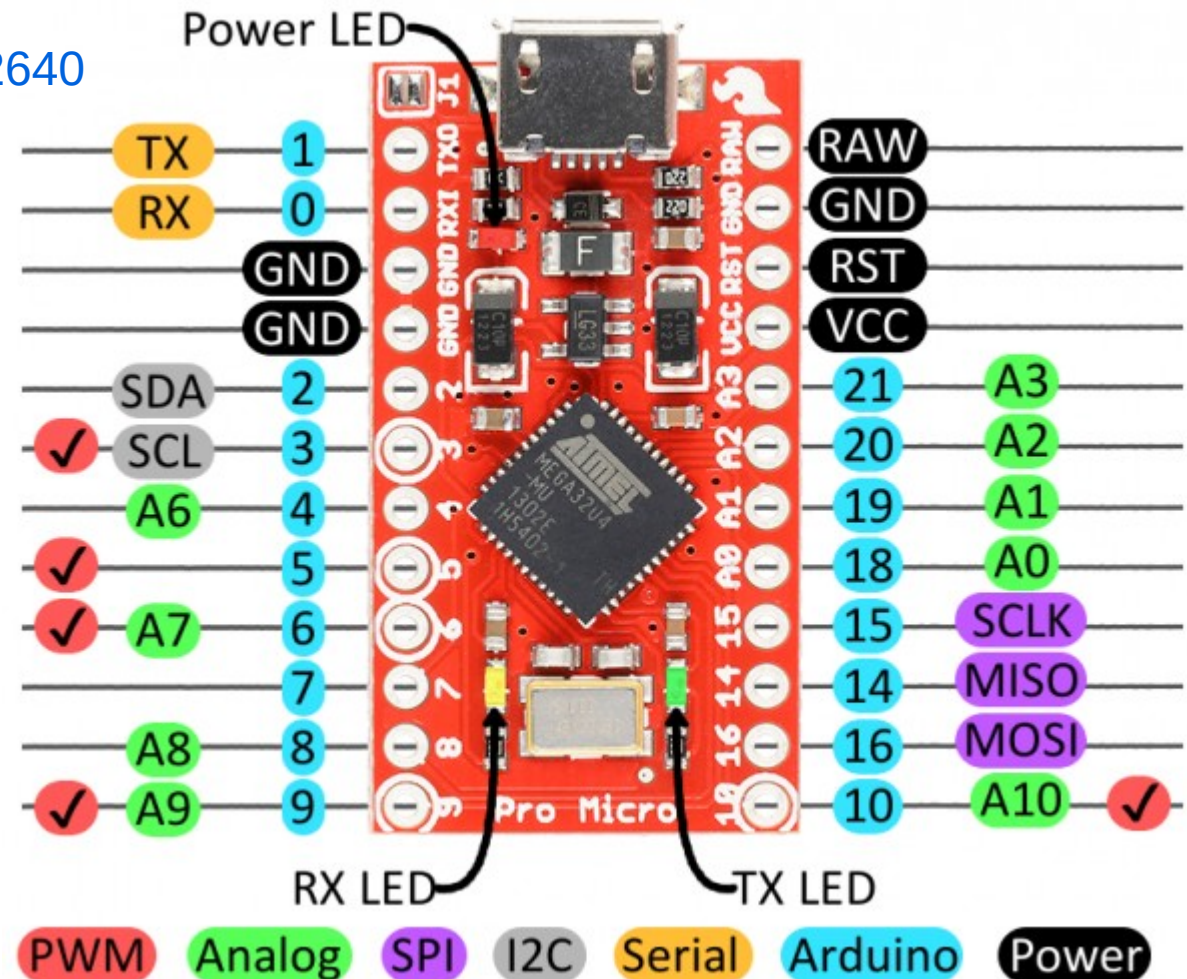
(Pro Micro mimics a Leonardo)

Load an Example

Examples → **Basics** → **Blink**

Replace LED_BUILTIN with 17

Just for fun speed it up by changing
1000ms delay to 100ms





Mozzi

audio synthesis library for Arduino

Hello Mozzi

Download the Mozzi sound synth for Arduino to your computer

<https://sensorium.github.io/Mozzi/>

In the Arduino Tool, navigate to **Sketch->Import Library**.

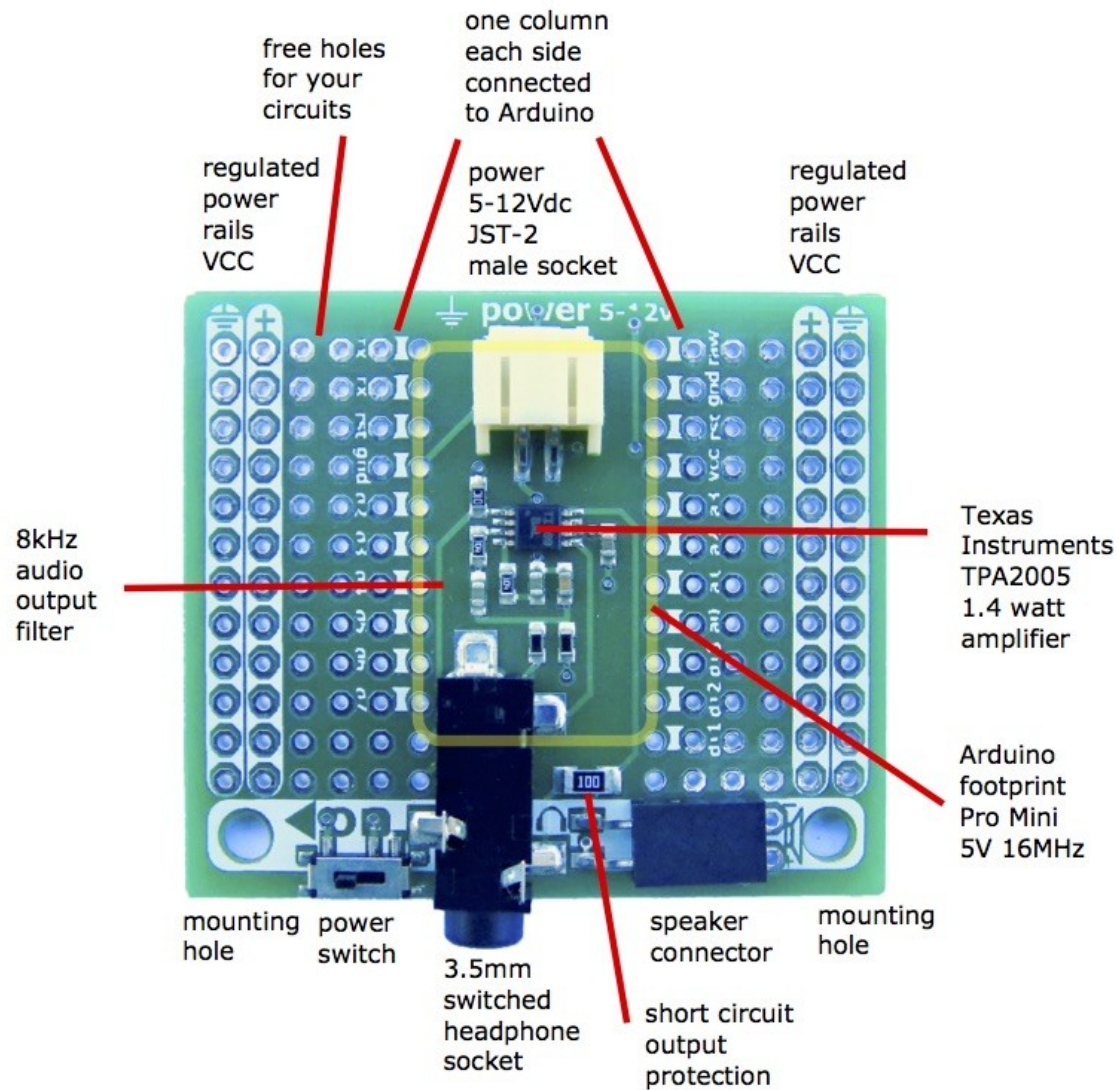
At the top of the drop down list select **Add Library**.

Navigate to your download location and open **Mozzi-master.zip**.

Mozzi

audio synthesis library for Arduino

Hello MozziByte



Mozzi

audio synthesis library for Arduino

Hello MozziByte

Insert the Arduino into MozziByte.
Be careful not to bend the legs.

USB connector on the Arduino goes
OPPOSITE the **Audio jack** on MozziByte.

Plug in headphones. Brace yourself :)

Look in **Examples->Mozzi->Basics**
Sinewave – try changing the frequency
Vibrato – try changing the rate

Try out these examples. Fiddle with parameters. Fun.

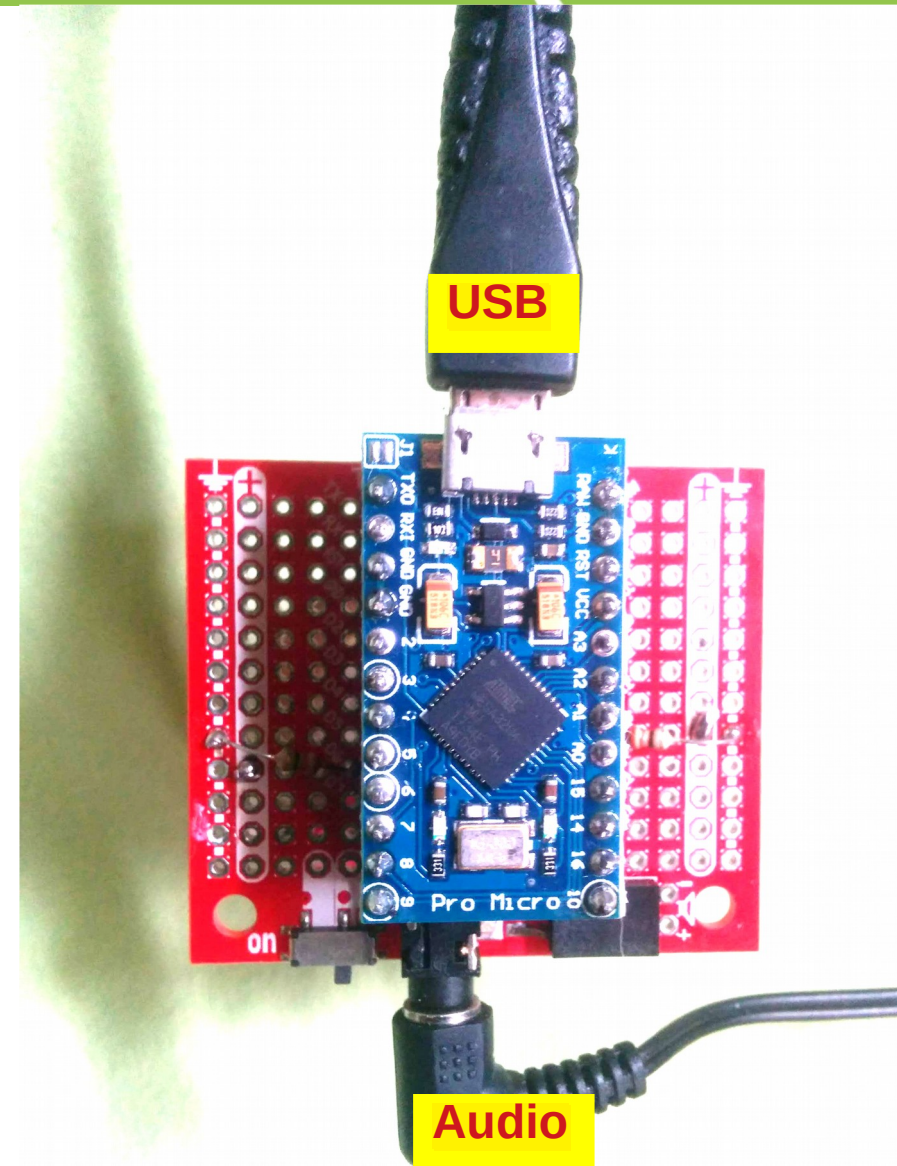
Examples->Synthesis

FMSynth

PacketSynth

Resonant

Sample

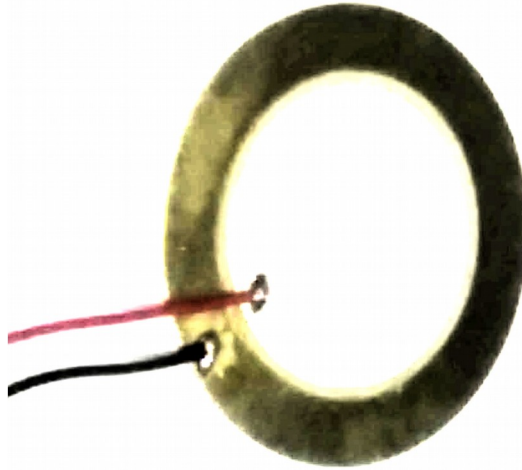


Mozzi

audio synthesis library for Arduino

Hello Piezo

Red wire to Analog 3
Black wire to GND



Piezo_Frequency

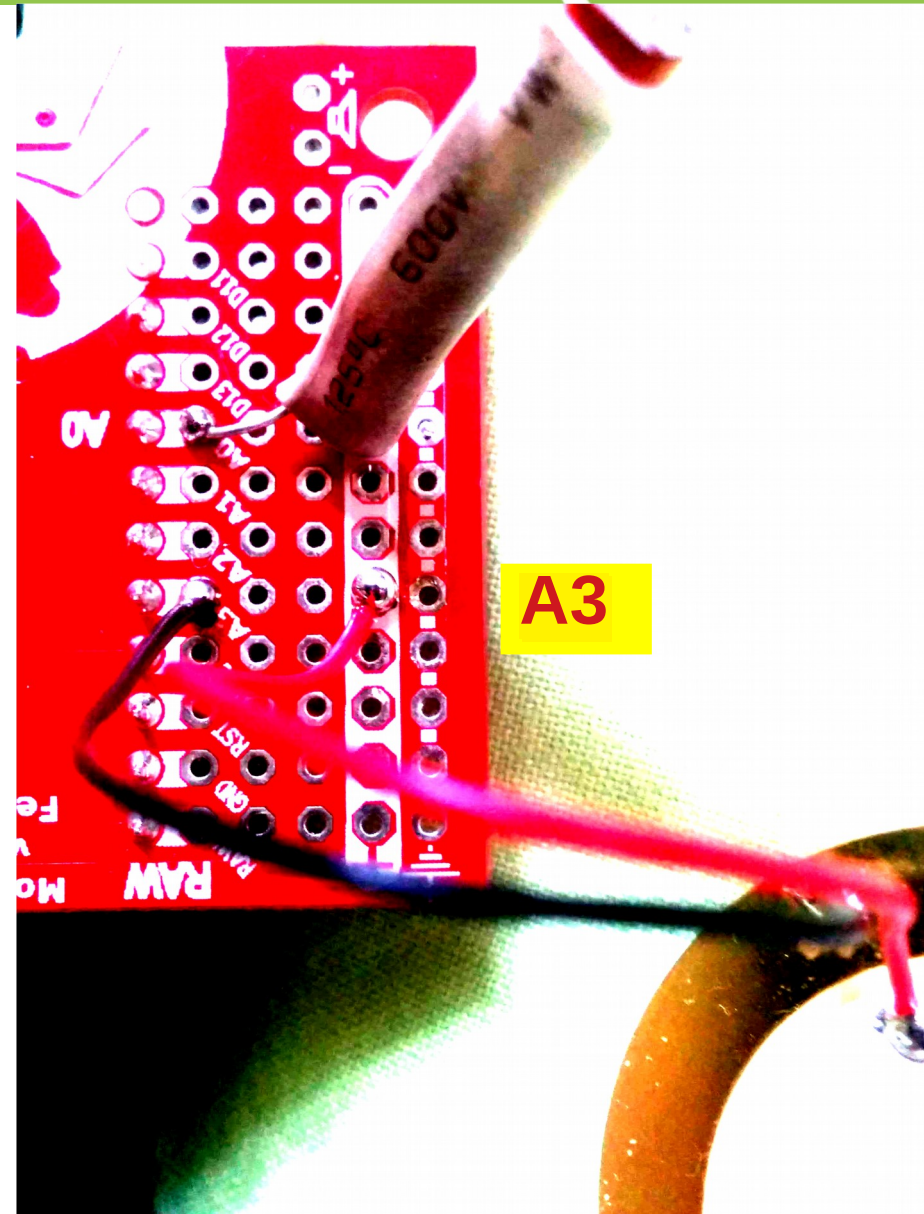
The pitch follows the pressure on the piezo sensor.

Piezo_FrequencyEcho

Adds an echo effect

Piezo_SampleTrigger

Piezo triggers sample – pitch is changed by LDR



Light Sensor

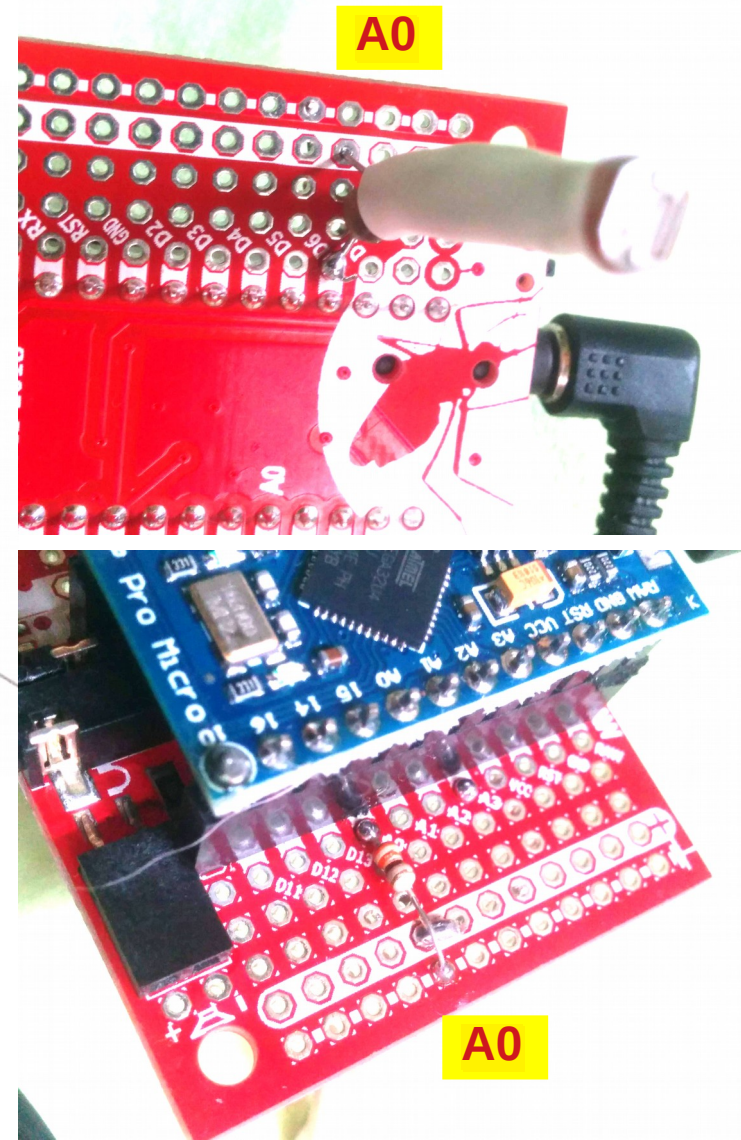
Create a Light Sensor using a LDR (light sensitive resistor) in series with a normal resistor to form a resistor ladder.

The circuit:

```
+5V ---|  
      | LDR  
A0 ---|  
      | Resistor  
GND ---|
```



Download **VolumeLDR.ino** code to the MozziByte
Change the loudness of a sinewave with a Light
Sensor



Beyond Hello

Add another Light Resistor :))
Solder LDR2 + resistor to Analog input 6 = D7 label

LDRx2_Wavepacket.ino

LDR1 changes the pitch and LDR2 changes the brightness of an FM synth

LDRx2_Piezo-FMSynth.ino

Use the Piezo to Trigger the 2 LDR Wavepacket Synth.

