



E-Gaita: Electronic 3-holed Flute



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VIEW IN BROWSER

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Summary

Electronic 3-holed flute from Salamanca (Spain)

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Tags: **flute** **instrument** **pipe** **windinstrument**

Electronic 3-holed pipe from Salamanca (Spain). The model is splitted in 6 pieces. It leaves space for electronics. The joints of the pieces are made with screws (see schematics on pictures).

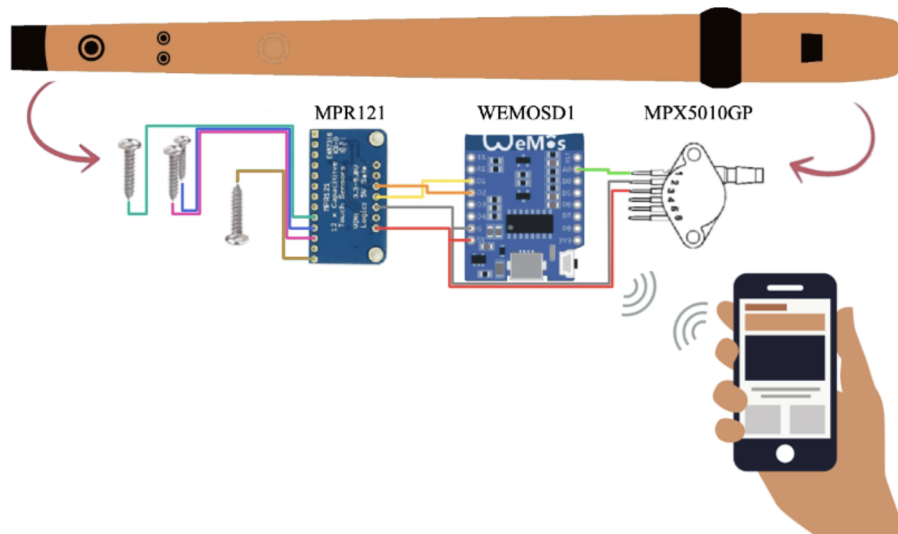
Real Prototype Showcase: <https://youtube.com/shorts/tJq8Ec82kSM>

List of guts

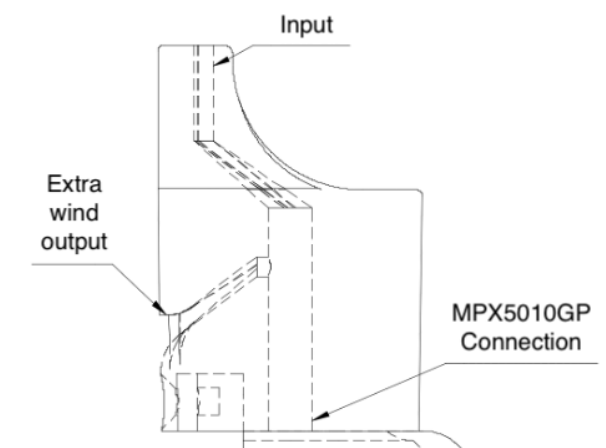
- 8u. — **5x3mm screws** (6 for joints + 2 for holes)
- 2u. — **4x2.5mm screws** (for semitone holes)
- 1u. — **MPR121** capacitive sensor
- 1u. — **WeMos D1 mini** mother boarding and device connection
- 1u. — **MPX5010GP** windflow sensor
- Xu. — **Wires** as you need for all connections
- ?u. — **Battery** as your election. It works even with no battery (USB power-supply)

More Details

It's recommended to use 3mm screws for the bigger holes and 2.5mm for the smaller ones (this smaller ones perform as a pair so you can control semitones, like if you are just covering one half of the hole), all connected to a capacitor sensor. It also leaves room for mainboard and output with USB wire used for alimentation. Blowing is controled with a pressure sensor in the mouthpiece. There are extra printable rings for covering the joints in case you want to hide them on a clean way. You can see here the electronics scheme:



Also here is how extra blowing will be extract out of the instrument, so it does not go back to your mouth after reaching the MPX5010GP connection (No cyclic blowing):



About the **software**: it is on a primal prototype version. If you are interested right now, you can md me, but I'll wait to improve it before uploading it publicly. It will also be accompanied with a mobile/pc application where you'll be able to change tone, notes range, pitch or even regulate air sensibility. You can record a song, and send it to groups, and

on the future there'll be features to practice that records (just like “guitar hero” style).

Future steps

I want to make a refactor of all the electronics, fitting all properly and saving space. So, in the future, I want to re-adapt the design of the flute, but these are all brainstorming ideas. Putting it all in a nutshell:

- Electronics → PCB
- Fitting 3D design to new electronics PCB
- Holes are real holes → capacitor is in the border of the hole ring (clean & user-known design)

Thanks for reading!! I hope you enjoyed discovering the E-Gaita!!

Model files



e-gaita.stl

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