Radio-Project

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Tags:
Links: Arduino IDE , Projects

This is an adaptation of Nick's work from educ8s.tv

Ideas for improvements: https://educ8s.tv/arduino-fm-radio-2/

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1. Inspiration:

Family reached out inquiring about the possibility of building a simple crude radio receiver.

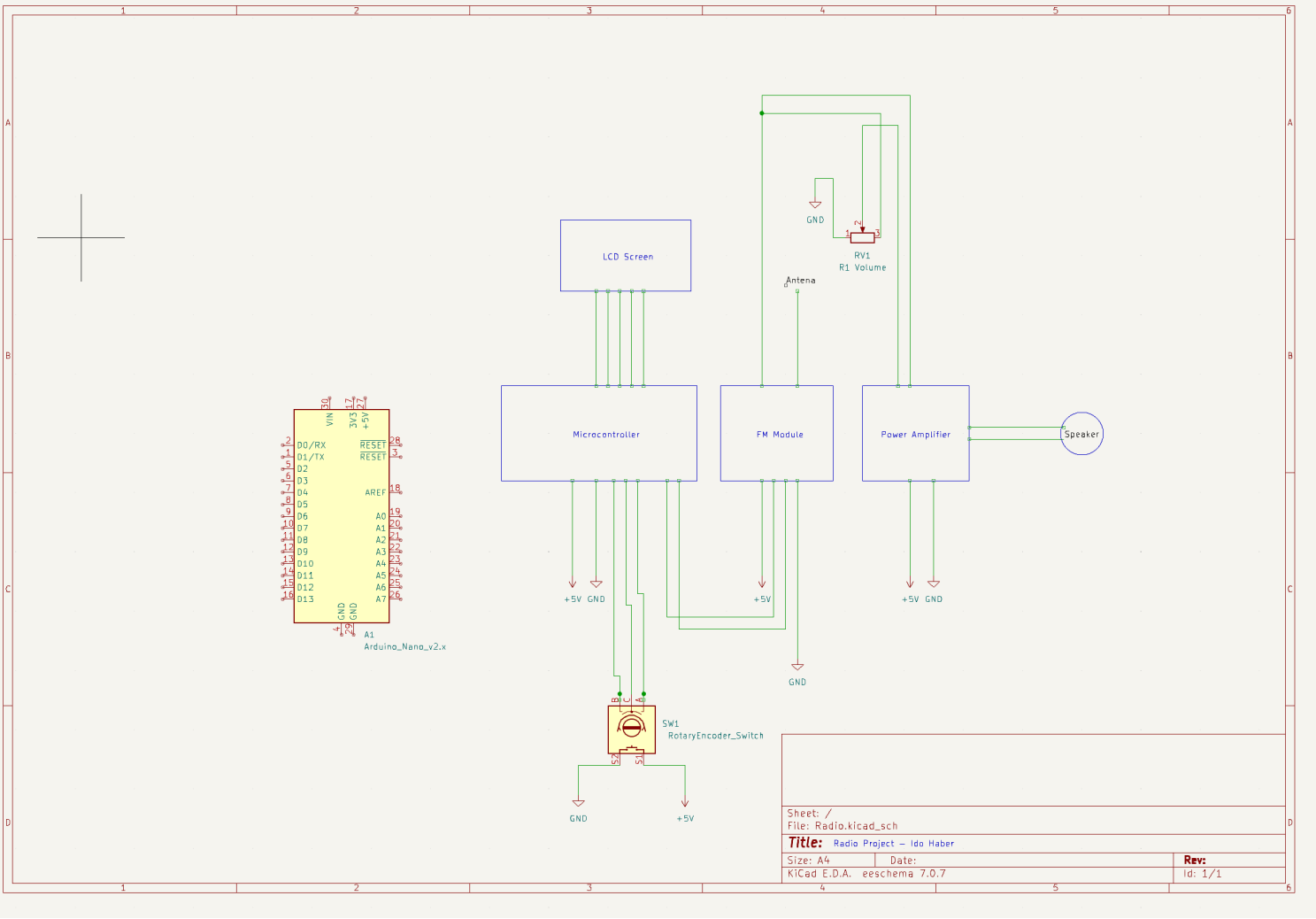
2. Conceptualization:

- simple, small, 9V battery operated.
- should seem like DIY device
- Should receive FM signals and output good(ish) quality signal

3. Minimum Viable Product Requirements:

- [ ] Microcontroller (Arduino Nano works well)
- [ ] FM Radio Module
- [ ] Nokia 5110 LCD
- [ ] 10K Potentiometer *2
- [ ] Rotary Encoder
- [ ] Audio Amplifier
- [ ] 3W Speaker
- [ ] breadboard / prefboard for prototyping
- [ ] Audio Cable
- [ ] Jumper Wires
- [ ] Solder station + Solder wire (not required but preferable)
- [ ] Antena

Current Schematic:



Iterative Design:

Later improvements will come here.

- housing from 3D printed schematics.
- PCB design (?)
- software improvements for:
  - station memory
  - increase stability when sweeping through freq range.
  - reduce noise
- miniaturisation

Dependencies:

All Arduino related libraries should be moved to /path/Arduino/libraries/

FM Radio Library

Nokia 5110 Graph

If you want to see the serial output of frequency vs voltage use a serial terminal like "CoolTerm" for Mac.

References

If you want to work with Nucleos instead of Arduino, but want to utilize the classic Arduino IDE you follow the insturctions here: https://www.youtube.com/watch?v=yssEiMLGH90

- https://github.com/stm32duino