Fox Transmitter

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Project Statement

Our team has built a Fox Transmitter that can switch between a high-power mode (10+ miles) and low-power mode (within 10 miles). With a partnership with the Trine Amateur Radio Club, we will be able to host foxhunts using either power mode. Opening this opportunity for the expansion of Foxhunts to the Trine University campus would attract a younger audience that Amateur Radio needs.

Features

- Dual Power Modes
- Displays
- Programmable Tones
- 3D Printed Case
- 10+ Mile Transmitted Radius

Group Member

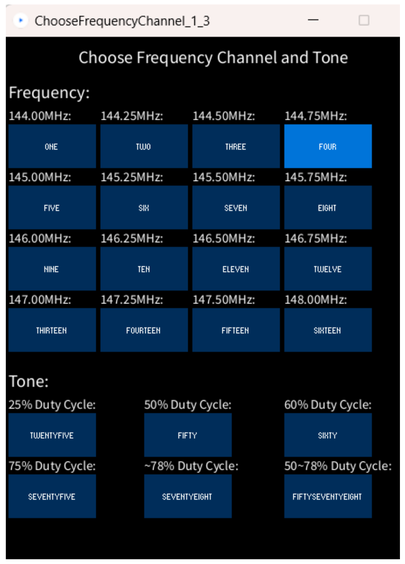
Our senior design group consisted of four Electrical Engineers. Three of the four group members are Amateur Radio Technician License holders, as well as members in the Trine University Amateur Radio Club.

Acknowledgments

This Electrical Engineering Senior Design Team would like to thank the following for their contributions, facilities, and resources:

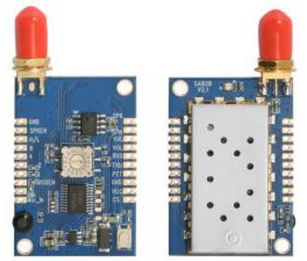
- Trine University Electrical and Computer Engineering Department
- The Fawick Family
- The Amateur Radio Club

OLED & Tones GUI



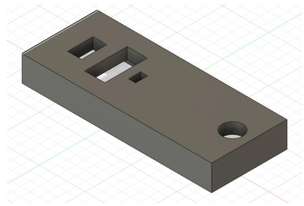
This GUI was created for the user to be able to change the displayed frequency and tones that will be on the OLED display. After the user has selected the in-use frequency, the display will appear like the image on the right.

Main Components



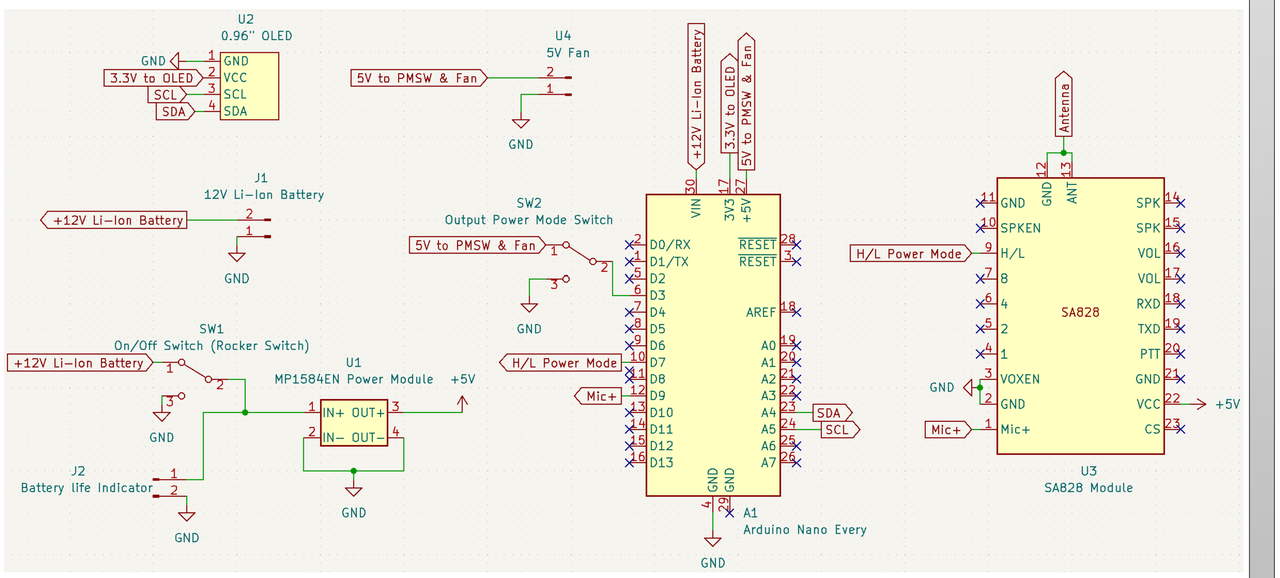
SA828 Module

Display Graphics



3D Printed Casing

Block Diagram



Distance Testing

Tested both the low-power mode (~0.5W) and high-power mode (~1.5W) at different distances

- 10-mile range (low/high-power modes)
- 13-mile range (low/high-power modes)
- 18-mile range (high-power mode)