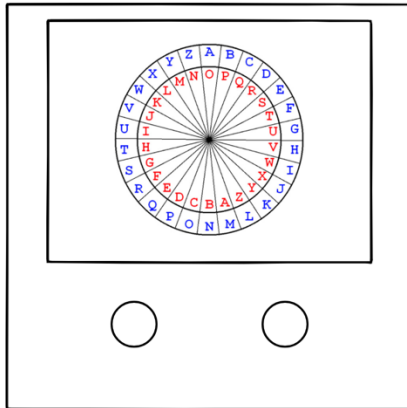


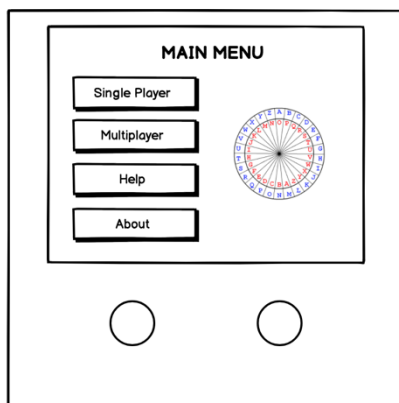
Function Development

Wireframe Storyboard



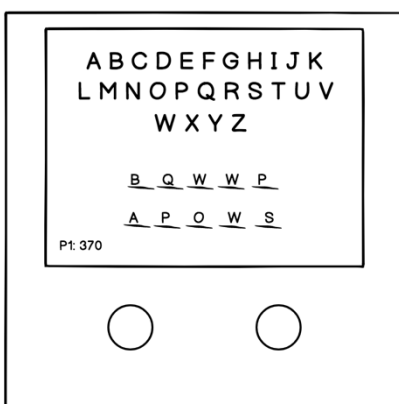
Splash Screen

This screen first appears when the device has been turned on. It displays a graphic of a cipher disk and then loads the main menu.



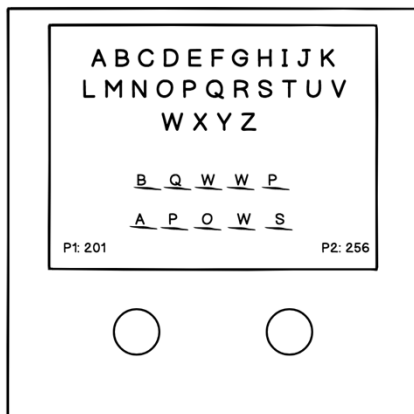
Main Menu

This screen allows users to navigate to the device's four different modes by first turning the rotary encoders to scroll through the various options and then pushing the knobs to select.



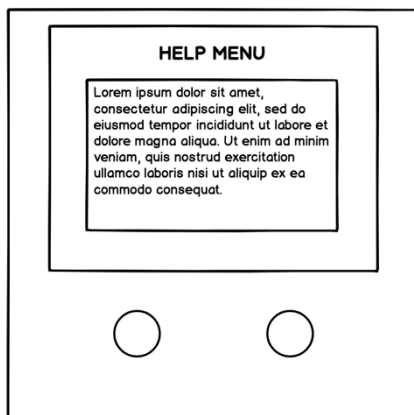
Single Player Mode

An alphabet appears at the top of the screen to indicate which letters are available to be chosen, while the randomly encoded phrase appears below it. The player's current score is also displayed in the bottom corner of the screen.



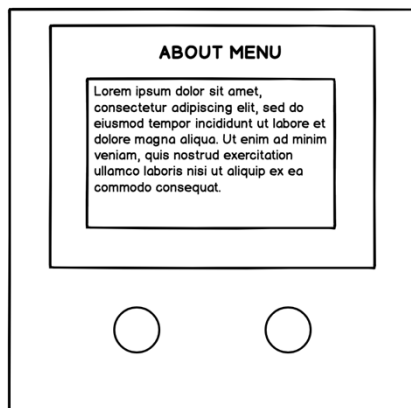
Multiplayer Mode

Like the single player mode, an alphabet appears at the top of the screen to indicate which letters are available to be chosen, while the randomly encoded phrase appears below it. Each player's current score is also displayed in the bottom corners of the screen.



Help Menu

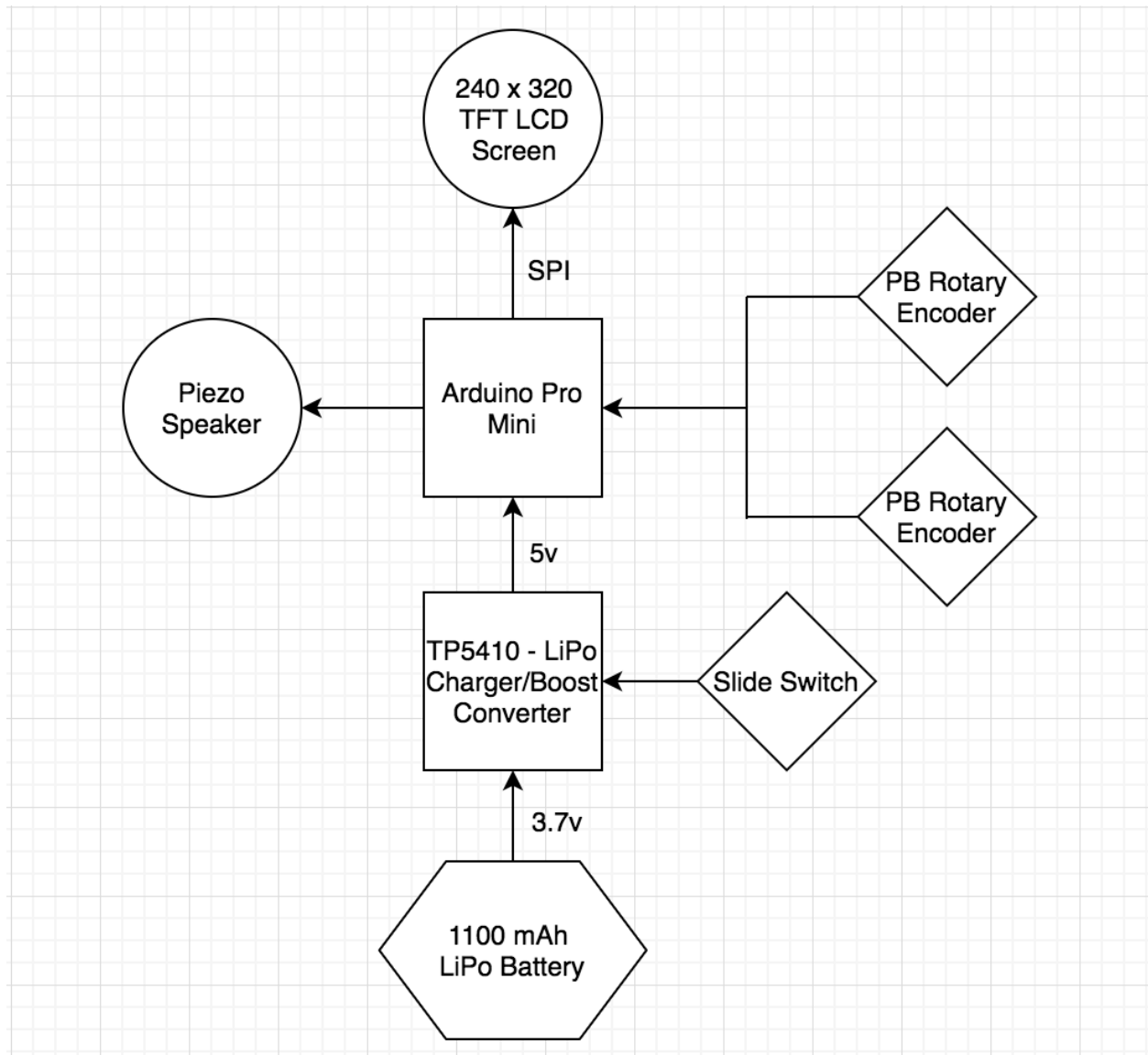
The help menu provides the user with information about how to correctly operate the device.



About Menu

The about menu provides information about the device and its designer.

Component Sketch:

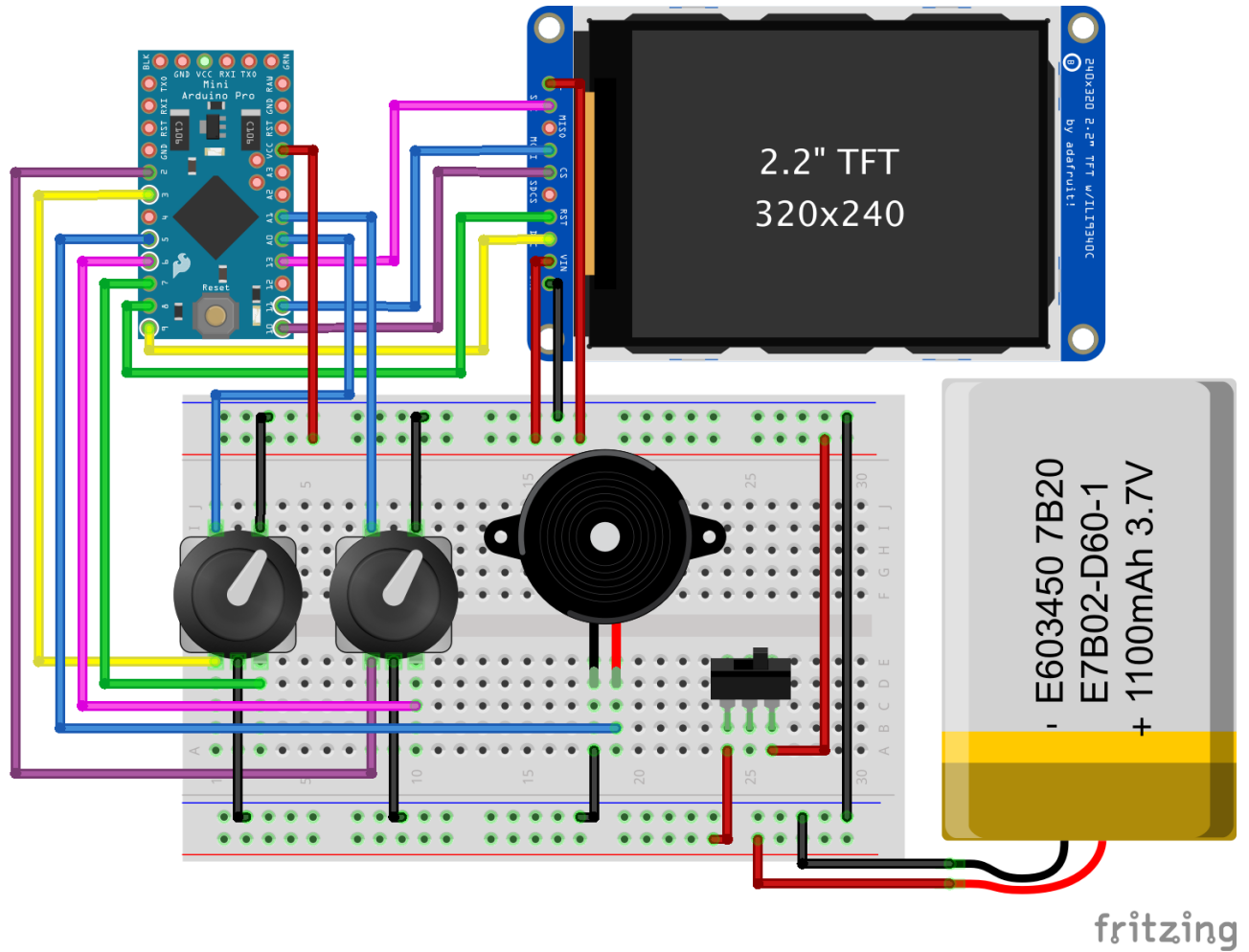


Bill of Materials:

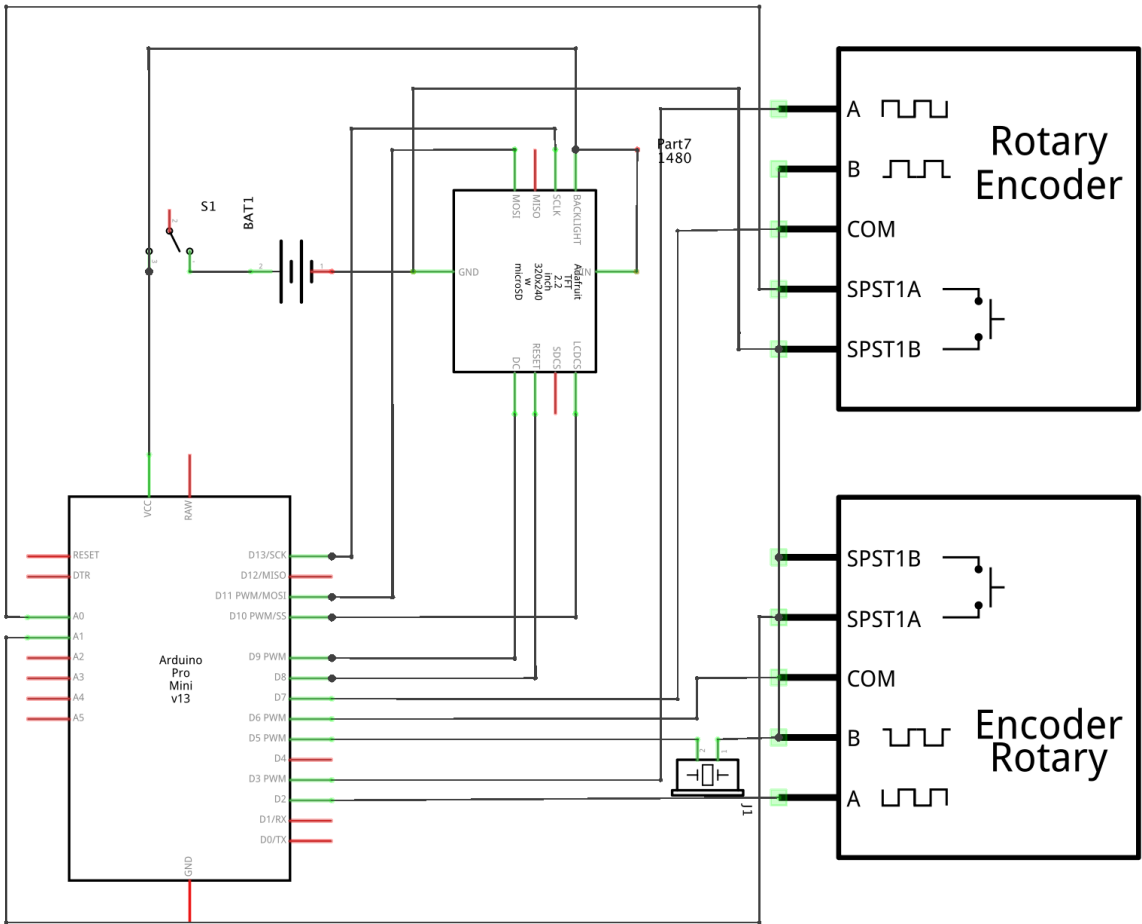
Name	Source	URL	Qty	Price
Arduino Pro Mini	Amazon	https://goo.gl/FTbvRy	1	12.25
Rotary Encoder with Button	Sparkfun	https://www.sparkfun.com/products/9117	2	3.95
TP5410 – LiPo Charger Boost Converter	Ebay	https://www.ebay.com/itm/191990401129	1	2.19
Lithium Ion Battery	Amazon	https://goo.gl/vg2RZZ	1	9.99
2.2" 4-Wire SPI TFT LCD Display	Amazon	https://goo.gl/sy5ggk	1	16.59
Piezo Speaker	Amazon	https://goo.gl/PWMcPm	1	2.99
Slide Switch	Amazon	https://goo.gl/Rtg4fD	1	5.31
Male Header Pins	Amazon	https://goo.gl/fHgU76	40	7.99

TOTAL \$65.21

Breadboard Model:



Schematic



fritzing