FACULTY OF ENGINEERING & APPLIED SCIENCE

Fuel Lock I/O Tester (FLIOT)

Carter Kent, Dawson Dressler, Justin Myles

1. Client Problem

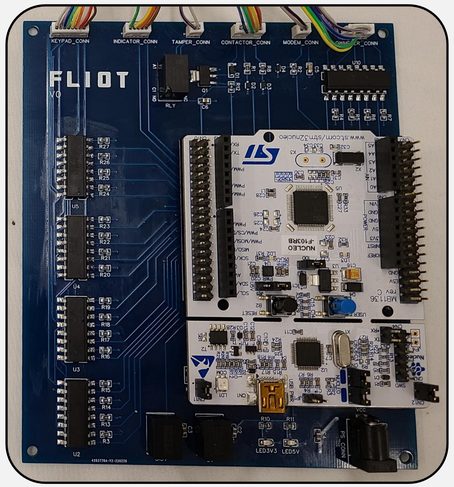
- IntraGrain Technologies Inc. manufactures a product called Fuel Lock
- Fuel Lock enables businesses to manage and track their fuel
- After developing an update, manual testing is required to ensure proper operation before the update is released to customers.
- Manual testing consumes both time and labour
- IntraGrain desires a solution that automates the manual testing process to reduce the consumption of human resources

2. Solution & Implementation

The Fuel Lock I/O Tester (FLIOT):

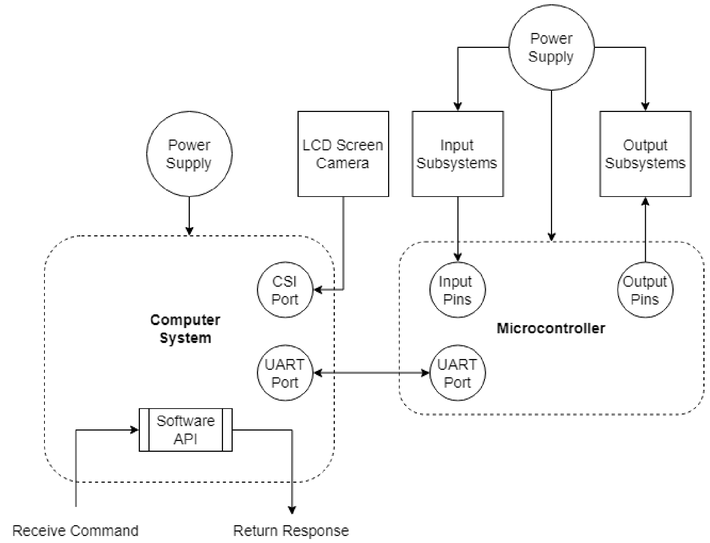
- Automates the manual steps in Fuel Lock's testing
- Receives commands from IntraGrain's testing software and responds with results over Wi-Fi
- Generates the following outputs to the Fuel Lock:
  - Simulates keystrokes
  - Simulates fuel being pumped
  - Simulates the Fuel Lock's door opening and closing
- Reads the following inputs from the Fuel Lock:
  - Extracts text from LCD screen
  - Reads the colour of the indicator light
  - Reads the position of the contactors
  - Detects the modem status

Fuel Lock with FLIOT installed



FLIOT Printed Circuit Board

3. Block Diagram



4. Results

The Fuel Lock I/O Tester (FLIOT):

- Integrates with IntraGrain's testing software to reduce the consumption of human resources during Fuel Lock testing
- Achieves greater than or equal to 98% accuracy for input and output subsystems
- Acknowledges each command with an estimated execution time
- Is installed and uninstalled on a Fuel Lock in less than 30 minutes

INTRAGRAIN
A Calian Company

FUEL LOCK®

Acknowledgements:
IntraGrain, Paul Laforge, Doug Wagner