Timing issue between master and slave

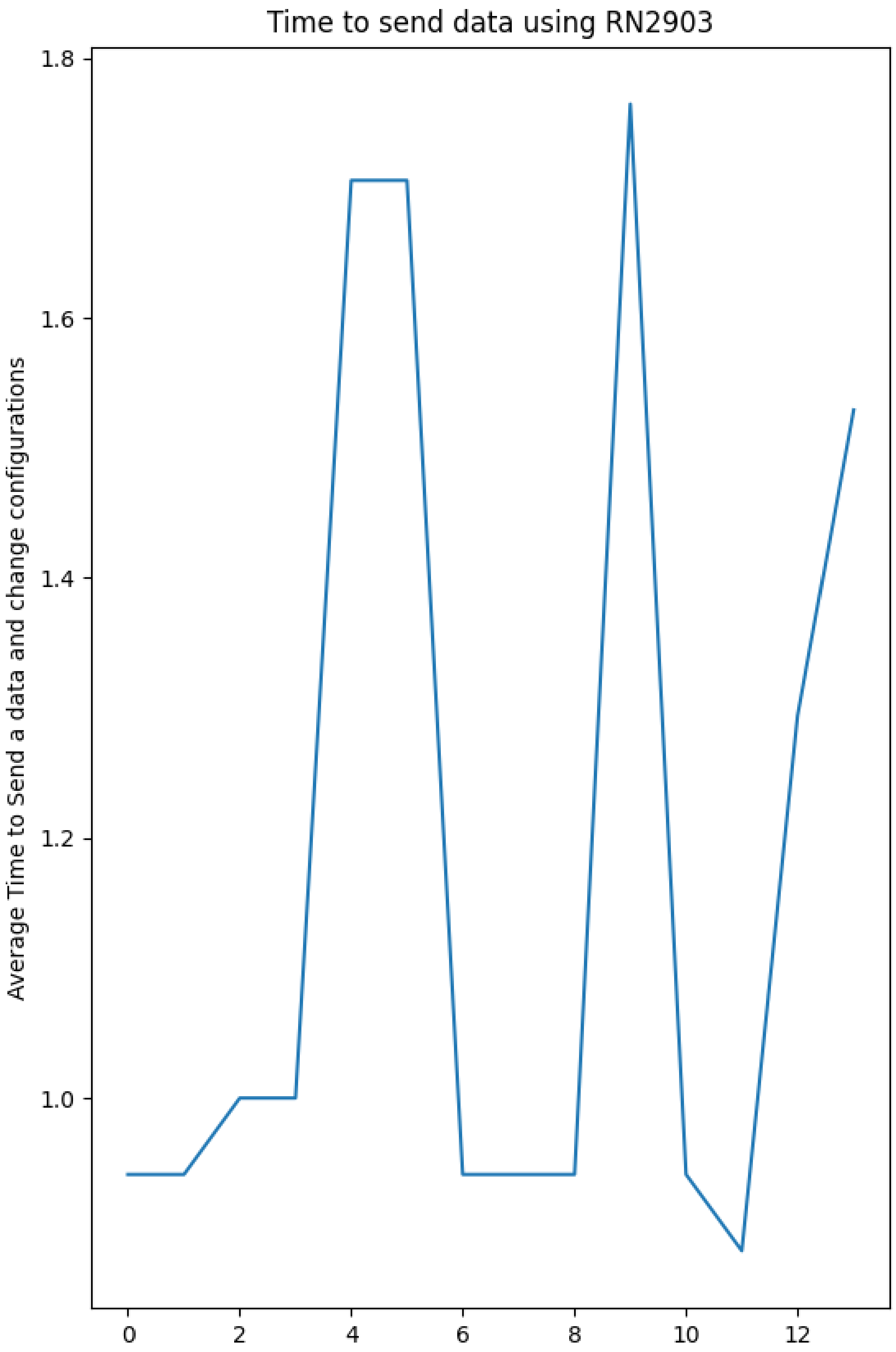
Overview

We can send messages a lot faster than receive them. This is because every time a message is received the RN2903 module leaves the `radio rx` mode and needs to be put back into receive mode. This takes more time than it takes to send a message. Please see the graphs below.

Graphing

Here we show the time it takes on average for each message to send per each batch. (Batches contain the same spread factor, coding rate, bandwidth and frequency. The only thing that changes is the power)

How long it takes to send information



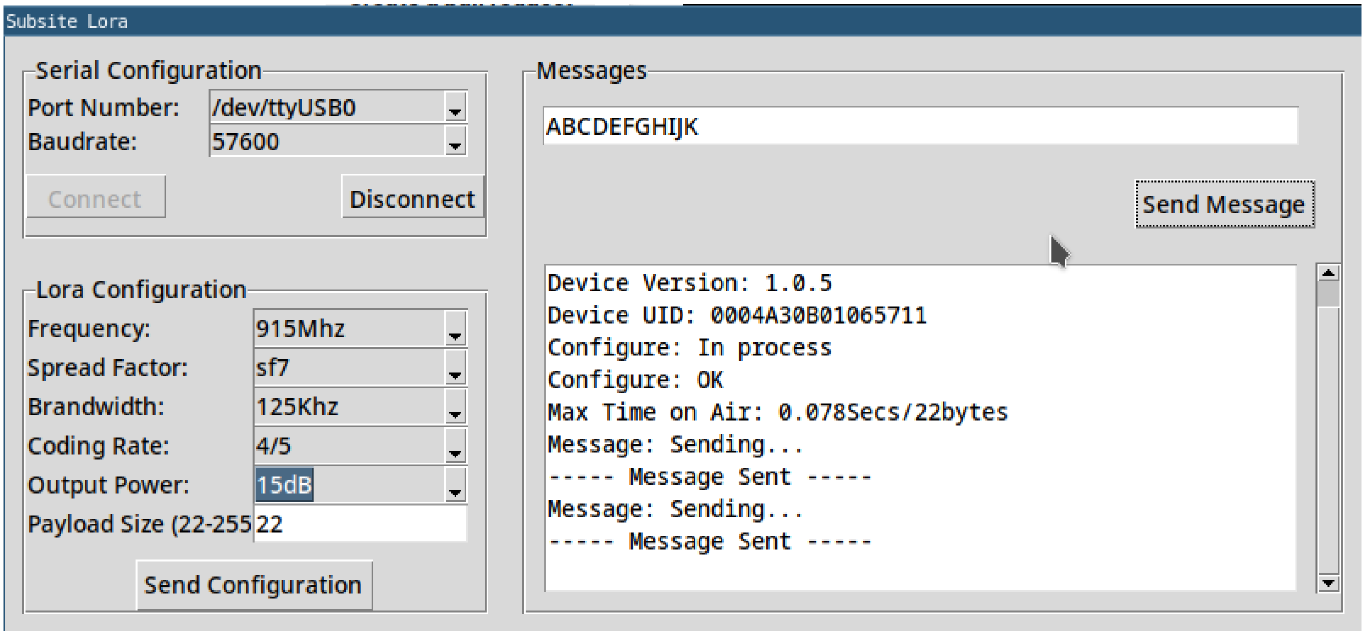
Config Number

How long it takes to go back into receive mode after receiving information

Round	Time it took (seconds)
1	3.658
2	6.144
3	5.523
4	5.402

Using a GUI made by Carlos to show the issue in a different way

GUI sender



Port Number: /dev/ttyUSB0
Baudrate: 57600

Frequency: 915Mhz
Spread Factor: sf7
Brandwidth: 125Khz
Coding Rate: 4/5
Output Power: 15dB
Payload Size (22-255 22

ABCDEFGHIJK

```
Device Version: 1.0.5
Device UID: 0004A30B01065711
Configure: In process
Configure: OK
Max Time on Air: 0.078Secs/22bytes
Message: Sending...
----- Message Sent -----
Message: Sending...
----- Message Sent -----
```

GUI receiver

```
***** Message Received *****
UID: 0004A30B01065711
Total Packages: 11
Current Package: 1
Payload: A
***** Message Received *****
UID: 0004A30B01065711
Total Packages: 11
Current Package: 2
Payload: B
***** Message Received *****
UID: 0004A30B01065711
Total Packages: 11
Current Package: 6
Payload: F
***** Message Received *****
UID: 0004A30B01065711
Total Packages: 11
Current Package: 9
Payload: I
```

Moving forward

We want to use MQTT to confirm that the message has been received. While this may slow down our testing, using the race horse analogy and knowing 100% which configurations work, we can improve the testing time. Synchronization of testing is a key component in having good results.

Tasks

- Connect to MQTT server and be able to talk
- Handle logic to sync up communication
- Come up with race horse algorithm to speed up testing
- Measuring current of the RN2903 to understand power consumption of the device