Unit Testing

# Setup

To perform the unit testing below, you are required to have all the libraries mentioned below on your beaglebone black.

Libraries:

* mocha library (can be installed using “npm **install mocha”**)
* chai library (can be installed using “npm install chai”)
* node (can be installed using “ sudo apt-get install nodejs”)

Please note that for the test cases below we used mocha 3.3 and chai 3.2 to run the cases.

To run the test, simply type in the command “ mocha <testfile>” where <testfile> is replaced with the test file name , for example mocha test1.js

# Test case 1 (LSmotionTest.js)

This test is to ensure that the server is able to interpret motion and differentiate between short motion and long motion. The test takes in a set of 0’s and 1’s as shown in the Test Data which simulates a motion (1) or no motion (0) and passing it a number per second to the function used in the Morse code application, then compares if the output is as expected.

# Test Plan

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test No. | Test Type | Test Name | Purpose of test | Test Data | Expected Result | Actual Result |
| 1 | Server | Long motion | To ensure server is able to determine long motion | 11110 | L | L |
| 2 | Server | Short motion | To ensure server determines short motion correctly | 001100 | S | S |
| 3 | Server | Noise tolerance | To ensure server does not detect the sensor noise as motion | 010101010 | undefined | undefined |

# Test case 2 (decodeLetters.js)

This test is to ensure that the server is able to decode a set of motions to letters in the Morse code table. The test takes in a set of motions as in test data and pass it to the function used in the main application to get the decoded message.

# Test Plan

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test No. | Test Type | Test Name | Purpose of test | Test Data | Expected Result | Actual Result |
| 1 | Server | Existing letter | Ensure server can decode to a letter that exists in the table | SLLL | B | B |
| 2 | Server | Non-existing letter | To ensure server does not return a letter if the motion set doesn’t match | SSLLSLSL | undefined | undefined |