# Stepstick Tester

Need to test:

* Step, Dir, En pins work:
  + Motor does nothing when not enabled
  + Motor moves depending on step and dir
* Microstepping pins work
  + Need to change MS pins and observe actual motor moved distance. Requires motor feedback.

Test Procedure

1. Board is provided with power. Microcontroller with test firmware boots and displays “Ready” on display.
2. Stepper driver is inserted into test socket.
   1. If inserted incorrectly, it should not damage the testing jig.
3. User presses button to begin test.

For each of the following test steps, the test continues until either a step fails or until the test is completed. Hence, a failed step will cause the test to stop prematurely with a message explaining the test failure.

1. Microcontroller enables 5V power line to stepper driver. Waits short period, and checks that there is no short on the 5V power line.
2. Microcontroller enables 12V power line to stepper driver. Waits short period, and checks that there is no short on the 12V power line.
   1. The microstepping pins are set to a specific microstepping setting (microstepping = 1x on first iteration).
   2. The motor shaft’s current position is measured using the attached encoder, and the position recorded.
   3. The DIR pin is set to a known state.
   4. The driver is enabled via the EN pin.
   5. The STEP pin is driven to move the motor ¼ rotation.
   6. The motor shaft’s new position is measured, and the difference calculated. If the motor has moved ¼ rotation (+/- some allowed tolerance) the test is considered passed.
   7. The DIR pin is inverted.
   8. The STEP pin is driven to move the motor ¼ rotation.
   9. The driver is disabled via the EN pin.
   10. The motor shaft’s new position is measured. If it is the same as the start position (+/- some allowed tolerance) then the motor direction has changed, and the test is considered passed.
   11. The STEP pin is driven to move the motor ¼ rotation.
   12. The motor shaft’s new position is measured. If it is the same as the previous position (+/- some allowed tolerance) then the motor did not move when disabled, and the test is considered passed.
   13. This iteration of the test is now completed. We return to Step A, incrementing the microstepping setting, or, if all MS settings have been tested, we complete this step.