

## Test Plan

Name: Spirit.1

Objective: Fix potential failures

Type of Testing: Black box- Developer

Entry Criteria: v 1.0.0

Exit Criteria: Tests fully completed and failures, if found, successfully corrected.

Components to be tested:

Serial Communication using UART

- Correct sending and receiving of messages
- Correct response from Nema steppers

Stepper Motor Movement

- Correct response que moving using a manual commands
- Correct response getting to the desired coordinate

Core XY mechanism

- Calibration of each step to the distance desired.
- Getting to reasonable speed
- Mechanism moves to desired point.

Platform up and down mechanism

- Platform moves freely and uniformly when needed.
- Platform stays in place when required.

Software interruptions

- Emergency push button interrupts everything the SPARC is doing
- Reset button brings everything back to initial value

Solenoid push mechanism

- Solenoid is set off as commanded.
- Solenoid touch is actually registered by the touch panel.

Electronic components

- Electronic circuit works as intended with a protoboard.
- Electronic circuit works as intended when soldered.

Test enviroment setup: Pickit 3, PIC18F4550, NEMA17 stepper motor, MPLAB X, Multimeter, DuckLight, YP-05 UART receptor.

Test Effort Estimates: 2 persons , 18 hours

Expected Number of Test Cycles: 36