

P11216 Wandering Ambassador

Electrical and Computer Test Plans & Test Results

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2. MSD II WKS 2-3 TEST PLAN – “HOW, WHO, WHEN”

2.1. Data Collection

2.1.1. Data Collection Structure

Test Number	Name	Eng Spec Number	Test Description
TE1	Sonar Range	ES7	Measure the range of the sonar sensors
TE2	Sonar Field of Vision	ES7	Measure the field of vision of the sonar sensors when mounted on the servo motors
TE3	Compass Resolution	ES7	Measure the sensitivity of the compass
TE4	Bump Sensor Sensitivity	ES7	Measure how much force is needed to trigger the bump sensors
TE5	Moisture sensor accuracy	ES25	Determine if the moisture sensor is accurate
TE6	Temperature sensor accuracy	ES28	Measure how accurate the temperature sensor is
TE7	Light sensor sensitivity	ES22	Determine how sensitive the light sensor is to changes in light
TE8	Solar panel operational	ES46	Determine if the solar panel is operational
TE9	Motor control lag	ES77	Measure how long the motors take to respond to commands
TE10	I ² C operational	ES19	Determine if the I ² C communication is operational

2.1.2. Sampling Techniques

Test Number	How Measured
TE1	Use a meter stick or measuring tape to record the maximum and minimum distance the sonar registers
TE2	Use a protractor to measure the sweep of the sonar
TE3	Use a protractor to measure how little rotation the compass registers
TE4	Use a force meter to see how much force is registered when the bump sensor triggers
TE5	Place the sensor in varying amounts of moisture and see corresponding measurements
TE6	Place the sensor in known temperatures and see if the reading is accurate
TE7	Apply varying amounts of light and observe change in the reading
TE8	Measure current generated by the solar panels with a volt meter
TE9	Issue a command and measure time with a stop watch
TE10	Read registers using the I ² C protocol and see if the correct result is returned

2.2. Test Procedure, timeline

Test Number	Person Responsible	Planned Execution
TE1	Ken/Rui	3/18/2011
TE2	Ken/Rui	3/18/2011
TE3	Ken/Rui	3/25/2011
TE4	Ken/Rui	4/1/2011
TE5	Ken/Rui	3/18/2011
TE6	Ken/Rui	3/25/2011
TE7	Ken/Rui	3/25/2011
TE8	Ken/Rui	4/1/2011
TE9	Ken/Rui	4/1/2011
TE10	Ken/Rui	3/18/2011