Innotek

DRINC

Hardware Test Document

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Tester: Date:

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Revision history

Date	By	Description of changes
02-Feb-2014	DRINC Team	Initial Creation
28-Feb-2014	DRINC Team	Additional Information Added
7-Mar-2014	DRINC Team	Finished Interface Test Documentation

1 Test Information

Test type

___ Full Test ___ Regression Test

System Under Test

System name: _____ *Staple the recorder listing*

Version: _____ *of the configuration here*

Test Personnel

Name: Brandon Arnold_____ Date: 02-Feb-2014___ Time/h: _____

Name: Owen Ledvina_____ Date:02-Feb-2014____ Time/h: _____

Name: Hoang Phan_____ Date: 02-Feb-2014____ Time/h: _____

Name: Kyle Timins_____ Date:02-Feb-2014____ Time/h: _____

2 Test Summary

Results

Conclusion of the test: **PASS / FAIL**

Identifiers of the observations recorded:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

Total number of cases failed: _____

Tester: Date:

3 Background

Purpose and Scope of the Test

This testing procedure will verify that all DRINC Hardware is functioning correctly. This includes the transport track and the valves as well as the arduino and power supply.

The requirements document will be available at drinc.org/documentation/requirements.pdf

Additional Information

This test procedure requires two arduino testing programs. Get them from Owen.

Experience required

- *Testing personnel must be familiar with the arduino microcontroller*
- *Testing personnel must be familiar with the DRINC electrical functionality.*

Test Items / Equipment Needed

- *Standard type A to B USB cable*
- *Computer with latest arduino IDE*
- *DRINC arduino testing programs*

Estimated test time

15 minutes

Reference Documents

[RD1] *DRINC Requirements Document, drinc.org/documentation/requirements.pdf*

Definitions

SRS	*Software requirement specification*
UC	*Use Case*
TC	*Test Case*

Tester: Date:

4 Preparing the Test Environment

Application Setup

- All connections between the Arduino and DRINC hardware must be secure.
- All hardware, including Arduino, must be receiving power.
- Mixing reservoirs must be disconnected.
- Arduino must be connected to computer and recognized by the Arduino IDE.

Equipment Checks

- Is the power supply powered on?
- Is the Arduino powered on?
- Is the Arduino connected to the computer?
- Does the computer recognize the Arduino?
- Are all power and data connections between the Arduino, servos, valves, and power supply good?

Test Instructions

If there is any uncertainty on how the interfaces work or interact, reference the requirements document at drinc.org/documentation/requirements.pdf

Comments: _____

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Tester: Date:

5 Test Cases

DRINC Hardware Testing

Special Instructions

NONE

Test Case ID	TC_FUNCT_04
Description	Tests the valves and servos
Applicable for	Arduino
Requirements	Arduino, servos and valves are powered and connected
Initial Conditions	Equipment is setup as per Equipment Setup section.

Step	Full / Regr	Task & Expected Result	
1		Open DRINCvalvetest.ino in Arduino IDE.	
2		Verify that the sketch downloads to the Arduino without error.	**Pass / Fail**
3		Run the sketch.	
4	R	Verify that all valves are repeatedly opening and closing.	**Pass / Fail**
5	R	Verify that the cup holder repeatedly moves from the near left corner to the far right corner of the track and back.	
6		Open DRINCsoftware.ino and download it to Arduino.	**Pass / Fail**
7	R	Verify that program downloads to Arduino without error.	**Pass / Fail**

Comments:

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Tester: Date:

6 Traceability matrix

Requirement id	Test case id	Note
Requirements.pdf	TC_FUNCT_04	

Tester: Date: