RAHS TECH

REMOTE AUTOMOTIVE HEATING SYSTEM
Test Plan

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Date Issued:
April 06, 2015

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System Test Plan

The test plan will have four criteria that need to be met in order to show the prototype is fully functional and operational.

1) Battery test will demonstrate the battery is operational and sufficient for fully powering the overall system.
2) Timer test will demonstrate that the timing system is fully functional as an alarm clock and responds to all user inputs.
3) Heater test will demonstrate the heater unit is able to warm the interior of a vehicle windshield in order to defrost possible ice.
4) Remote control test will demonstrate the remote control system successfully turns heater on/off from a remote location.

Individual systems detailed testing requirements are stated below.

1) Battery and Power Consumption Test

The battery and power testing procedures will include but not limited:

Input	Connect the heater directly to the battery for 10 minutes
Conditions	No electronic parts should be fried upon starting Ideally this test will be done in cold weather conditions
Output	The battery should have 50% power left over before shut down

2) Timer Test

The timer testing procedures will include but not limited:

Input	Set the alarm clock timer to activate the system The system should stay activated for 10 minutes
Conditions	This should test will be done while the Arduino is in an idling state
Output	The timer should activate the relay switch The temperature sensor should provide correct reading on display Phi-2 Shield should provide proper interface for user to control the system

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3) Heater Test

The heater testing procedures will include but not limited:

Input	The user will turn the heater on by activating the power switch directly on the heater The heater will blow hot air onto the windshield
Conditions	This test will be done under cold weather conditions
Output	The air will raise the temperature of the air in the vehicle

4) Remote Control Test

The Remote Control testing procedures will include but not limited:

Input	Activating the system in different distance away and between obstacles After the system is active by timer, press the stop button
Conditions	
Output	The system can be activated at anytime The system should deactivate in anytime