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**Fall**

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T06 – Test Plan

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NES LockBox

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# Introduction

This test plan is designed to test the performance, functionality, reliability, and usability of NES lock box. The NES lock box employs an NES controller for user input, an LCD screen for user interface, a solenoid to lock and unlock box lid, and simple wood box design.

## Objective

The unit should maintain a locked state until the user enters the appropriate code using the NES controller. The unit should display the user input from the NES controller on the LCD screen. The LCD screen should also display whether the input code was correct or incorrect.

# Testing Equipment

* Power Supply
* Multi-meter
* Atmega Debugger/programmer
* Atmel Studio

# Test Methods

* Pass/Fail result

# Reference Documents

1. Atmega Datasheet
2. LCD datasheet
3. Solenoid Info sheet
4. NES controller schematic

# System Tests

## Module Tests

* Each button on controller outputs correct voltage when pressed
* LCD correctly displays red, green, or blue when correct voltages applied
* Test 12 volt and 3 volt power on board, test at each input to component
* Test output signals of chip to solenoid and RGB of LCD
* Test line, curser and character display on LCD

## Stress Tests

* Check solenoid ability to open and close multiple times in amount of time
* Solenoid ability to remain in unlocked state for length of time

## Integration Tests

* Each button pressed displays correct symbol on LCD
* When correct button combination is pressed, solenoid unlocks

## Error Tests

* Once user input code has been saved, is it still saved after power is removed

## Use Test

* User is able to unlock box when provided with available documentation
* Ability to unplug and plug power to box
* Ability to open and close box lid with wires staying intact
* Box remains securely locked when solenoid is in lock state