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| iRobot Roomba 650 – Test Plan | | |
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| Functional Tests (Hardware and Software scenarios) | | |

# Anatomy | Tests (Hardware and Software Tests)

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| **Top View: Buttons and Lights Functions**   1. Test Spot Button | |
| 🗸 | 1. Test the Scheduling Interface | |
|  | 1. Test Troubleshooting Light | |
|  | 1. Test CLEAN/Power Button | |
|  | 1. Test DOCK Button | |
|  | 1. Test Dirt Detect   **Bottom View: Brushes and Sensors**   1. Test Cliff Sensor Openings 2. Test Edge Cleaning Side Brush 3. Test Right and Left Wheel Modules 4. Test Dirt Detect Sensor 5. Test Contact Points for the Home Base   T | |

# Cleaning patterns various room layout | Tests

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|  | 1. Test Floor pattern: Square room, no obstacles[Location], no cliffs[Location]: Test Cleaning Pattern 1 |
|  | 1. Test Floor pattern: Square room, no obstacles[Location], no cliffs[Location]: Test Cleaning Pattern 2 |
|  | 1. Test Floor pattern: Rectangular room, obstacle Table[x,y], Cliff Stairs[x,y]: Test Cleaning Pattern 2 |

# Cleaning Mode(s) | Tests

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|  | 1. Test Clean Mode – Test calculation of cleaning time based on 100sq/ft square room based on the following algorithm for calculating the cleaning time. |
|  | 1. Test Clean Mode – Test calculation of the room size for 150sq/ft rectangle room. |
|  | 1. Test Clean Mode – Test calculation of a room size that 10000sq/ft |
|  | 1. Test Spot Mode – Test Spiral of approx. 3ft diameter in centralized spot (Area on floor) |
|  | 1. Scheduled Cleaning Mode – Program Roomba to clean in future time within the schedule. |
|  | 1. Scheduled Cleaning Mode – Start a schedule that is in the past |
|  | 1. Scheduled Cleaning Mode – Test the occurrence of the reminder flash of next scheduled time. |
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# Cleaning System | Floor surfaces and obstacles | Tests

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|  | 1. Floor Surface Wood[Type: Oak]: Test Roomba detects and cleans wood surfaces. 2. Floor Surface Carpet[Thickness: Thick]: Test Roomba detects and cleans the Carpet surface |
|  | 1. Floor Surface n… |
|  | 1. Test Anti-tangle System – Cords only 2. Test Anti-tangle System – Combination of cords, small obstacles and carpet fringe. |
|  | 1. … |
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# Battery Charging/Re-charging and Storage Test

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|  | 1. Test Roomba operates on less than 5% battery life and then searches for it’s recharge base to recharge. |
|  | 1. Test Roomba goes into a 16 Hour Refresh Charge when battery has approx. 0% life. |
|  | 1. Test the Clean Button pulse when battery is recharging. |
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# Test Virtual Wall – Manual and Auto

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|  | 1. Test 15 degree angle Virtual Wall Sensor placement in comparison to Roomba. Verify that the Roomba changes movement to the optimal direction to clean based off of the Virtual wall Sensor. |
|  | 1. Test 45 degree angle Virtual Wall Sensor placement in comparison to Roomba. Verify that the Roomba changes movement to the optimal direction to clean based off of the Virtual wall Sensor. |
|  | 1. Test 0% battery life on virtual wall sensor with Roomba On cleaning. |
|  | 1. Test Virtual wall power light when on. Will blink repeatedly. |
|  | 1. Test a defective sensor scenario. |
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