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| **1. UAT Scope (In Scope – Out of Scope)** | |
| **UAT - In Scope** | **UAT - Out of Scope** |
| - Climate control  - Room occupancy  - Temperature/humidity  - PCB | -Setting temperature outside of the specified range of 10⁰ C to 30⁰ C  -Changing the humidity of the closed environment  -Modifying the voltage from the regulator |

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| **2. UAT Assumptions and Constraints** |
| **UAT Assumptions** |
| The user will have at least junior level in college engineering. |

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| **UAT Constraints** |
| With our system, there is a set range that the fans will operate at. Because it is a scale model, the temperature can’t be set lower than 10⁰ C or greater than 30⁰ C. There is a room occupancy limit of three people. The max voltage the PCB can supply to components is 12 V. A light and heater will be used through a relay. |

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| **3. UAT Risks** | | | |
| **Description** | **Probability**  **High|Med|Low** | **Impact**  **High|Med|Low** | **Mitigation** |
| Components failing  Short-circuit | Low  Low | High  High | Assure PCB was fabricated correctly.  Assure correct voltage is used for each component. |

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| **4. UAT Team Roles & Responsibilities** | | |
| **Name** | **Roles** | **Responsibilities** |
| Eric Pires | Team Leader |  |
| Richard Harrison | User Representative |  |
| Johnny Lamanuzzi | Test Analyst |  |

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| 5. UAT Entry Criteria | |
| **ID** | **Criteria** |
| 5.1 | Testing Environment – Closed environment where heat and cool air can be detected with access to a wall outlet to power a light and heater  *‘* |

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| 6. UAT Requirements-Based Test Cases | |
| **ID** | **Test Cases** |
| 6.1a | Procedure: Set the temperature to 10⁰ C  Expected Results: Cooling fan will start operation |
| 6.1b | Procedure: Set the temperature to 30⁰ C  Expected Results: Heating fan will start operation |
| 6.1c | Procedure: Procedure 6.1a or 6.1b  Expected Results: LCD will read lower or higher temperature depending on which fan is operating |
| 6.2a | Procedure: An entity enters the closed environment  Expected Results: Light will turn on |
| 6.2b | Procedure: An entity leaves the environment making it empty  Expected Results: Light will turn off |
| 6.2c | Procedure: 3 or more entities are present in the room  Expected Results: Warning LED will illuminate |
| 6.3 | Procedure: Test MOSFET  Expected Results: MOSFET controls cooling fans correctly |
| 6.4 | Procedure: Test Relays  Expected Results: Relays controls light and heater correctly |
| 6.5 | Procedure: Test Voltage Regulator  Expected Results: Voltages are dispersed to the correct component |

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| 7. UAT Test Results | | |  |  |
| **ID** | **Test Cases** | **Pass/Fail** | **Tested By** | **Date Tested** |
| 6.1a | Decreasing Temperature |  |  |  |
| 6.1b | Increasing Temperature |  |  |  |
| 6.1c | Changing Temperature |  |  |  |
| 6.2a | Room Occupancy Increases |  |  |  |
| 6.2b | Room Occupancy Becomes Zero |  |  |  |
| 6.2c | Room Occupancy Exceeds Limit |  |  |  |
| 6.3 | Test MOSFET |  |  |  |
| 6.4 | Test Relays |  |  |  |
| 6.5 | Test Voltage Regulator |  |  |  |

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| 8. Document Signatures | | | |
| **Role** | **Name** | **Signature** | **Date** |
| Service Owner |  |  |  |
| Project Manager |  |  |  |
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# 9. Addendums & Appendices