**Integration Test**

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| **Test Method** | **Pass/Fail** | **Test Result** |
| Power on the system but no not press start on the controller. Place one block on the input robot pad and ensure it is not picked up. | Passed | The block was not attempted to be picked up by the robot. |
| Press the system start button with one block on the input pad, check the block travels through the system correctly. | Passed | The block travelled to the end of the system with no problems. |
| Place another block on the start pad, when the robot attempts to the pick the block up move it away. The robot should retry. | Fail | The robot did not attempt to retry the pickup. |
| Place a block on the start pad, when the block has been picked up press the pause button. The system should finish the current action and then pause. | Pass | The system was stopped when the block reached the input end of the conveyor. |
| Resume the system and then immediately pause the system. | Pass | The system again paused successfully; when the system was finally resumed the block was picked up by the output robot. |
| With the system in the running state press the stop button. Now place a block on the input pad, the system should not pick it up. | Pass | The robot did not attempt to pick up the block. |
| Start the system again and allow the input robot to pick up a block. When the block reaches the conveyor press the emergency stop button. The system should immediately halt. | Pass | The system immediately stopped. |
| With the system in the emergency stop state clear the system of all blocks and press the reset button. Then proceed to the start state and check a block can successfully traverse the system. | Pass | The system was able to move a block after being in the emergency stop/reset state. |
| Place multiple blocks on the system one after each other ensuring the input robot picks up a block as soon as it has dropped off the previous one. Check no blocks have been lost, dropped or placed on top of each other. | Pass | No blocks were lost. The output robot successfully waited for the output pad to be cleared before picking up another block. |
| Check after two pickup attempts the robot will put the system into the emergency stop state. | Fail | The robot did not attempt pickup so this could not be tested. |
| Check that the control panel light illuminates when the system is started and is not illuminated when the system is stopped. | Pass | The light illuminated when the system was started. |
| Check the emergency stop light illuminates when the system is in the emergency stop state | Pass | The emergency stop light illuminated when the system was started. |
| Check that the D1 light on the control panel flashes when the system is stopping with blocks still in the system. | Pass | The light flashed until all the blocks were free from the system. |
| Check that the D2 light illuminated when the system was paused | Pass | The D2 light illuminated when the system reached the paused state. |
| Place another block on the start pad, when the robot attempts to the pick the block up move it away. The robot should retry. | Pass | The robot retried the pickup twice and then went into the emergency stop state. |
| Check after two pickup attempts the robot will put the system into the emergency stop state. | Pass | The robot did not attempt pickup so this could not be tested. |