Revision History

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| --- | --- | --- | --- |
| **Revision** | **Change Order #** | **Description and Reason of Change** | **Author** |
| A | RC???? | Initial Release | Howard Zhou |

Work Instructions Approvers

|  |  |
| --- | --- |
| Approved with Electronic signature. See: | RC??? |
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| --- | --- |
| **Name** | **Title/Role** |
| Edward Naclerio | Principal Electrical Engineer |
| Jason T. Iceman | Engineering Director, R&D |
| Nathan Grover | Sr. Quality Engineer |

**Instructions:**

This document contains at least two (2) sections, 1) this page, the signature page for the un-executed work instructions, and 2) the actual work instructions that are to be followed and completed. Additional appendices may be attached to the work instructions, but these appendices are for informational purposes only and are not required to be included in the archived, executed work instruction.

The person following and executing this work instruction, the “engineer”, shall first read and understand the work instructions. The engineer will execute the work instructions step by step and acknowledge each completed step as directed, (i.e. check mark, initials, pass or fail, or write data). The engineer shall initial each page of the instructions.

Once completed, the engineer shall sign and date the completed instructions and then have a subject matter expert review the completed instructions.

The subject matter expert is responsible to designate an individual to assign a document control document number to the completed instructions, write this number on the top of instructions page one, scan into a pdf, verify the pdf to the hand completed original, and enter into the document control database, (Agile at the time of this writing). It is only required for a quality assurance member to approve the document in the document control database.

# Description

This document describes how to install and run the Kontron GPIO Button test on a visualization computer to monitor and test the functionality of the Button Box Interface.

# Equipment and Materials

The following items, or their equivalents are used in this procedure.

|  |  |  |
| --- | --- | --- |
| Item Description | Agile Part Number | Quantity |
| Kontron Visualization SBC Assembly | PT00082723 | 1 |
| USB Storage Drive | N/A | 1 |
| USB Keyboard | N/A | 1 |
| Ethernet RJ45 Cable | N/A | ~~1~~ |
| Computer Monitor | N/A | 1 |
| Display Port Cable | N/A | 1 |
| Windows 7 (or later) Computer with Mouse and Keyboard and internet access | N/A | 1 |
| Kontron GPIO GUI test application | PT??? | 1 |
| SUBASSY, TOWER, BUTTON BOX | PT00076673 |  |
|  | | |

# Procedure: Setup and Install the Kontron GPIO / Fan GUI application tools on Visualization Computer

| **Step** | **Action** | **Complete** |
| --- | --- | --- |
|  | Using a Windows computer, download the GPIO Button Box test application software (GPIO pt-000??? from Agile. | ⎕ |
|  | Plug the USB storage drive into an available port on the Windows computer. | ⎕ |
|  | Extract the executable files from the archive and copy them onto the USB storage drive | ⎕ |
|  | After the files are successfully transferred, disconnect the USB drive from the Windows computer. | ⎕ |
|  | Power on the Visualization computer and insert the USB drive into an available port. | ⎕ |
|  | Copy the files over from the USB drive onto a desired folder in the Visualization computer. | ⎕ |
|  | Once the file transfer is complete, locate the recently copied files on the Visualization computer and double-click on either ‘start\_Gpio’ or ‘start\_Fan’ to execute the application.  screen1  ~~For Tower Button Interface test, please refer to the next section (4)~~  ~~For Fan application usage, please refer to section 5 for instructions.~~ | ⎕ |

# Procedure: Testing the Button Box Interface

| **Step** | **Action** | **Complete** |
| --- | --- | --- |
|  | Connect the Button Box Device (PT-00076673) via Ethernet cable into the Tower Button Interface port located at the back of the Visualization computer like shown:  DSCF3648  Tower Button Interface port | ⎕ |
| Current GPIO states | Bring up the GPIO Application ( see 3.7 for startup instructions)  Main application window  System Activate/Pause LED ON/OFF button  screen3  Latch Signal Indicator  System Activate/Pause Button ON/OFF indicator  Latch signal reset button | ⎕ |
|  | To begin the test push down the System activate button test like and continue to hold down the button.  DSCF3649  System Activate button.  With the button still pressed down, the System activate button indicator on the application window should change state to ‘ON’. Once satisfied with the result, the button may be released.  sys_act_button_on  If not, re-check the connection to ensure the Button Box is connected correctly to the visualization computer and repeat the test again. | ⎕ |
|  | Next, test the LED light on the System Activate button by using a mouse and click on the LED on/off button in the application window with.  sys_act_button_on  The System activate button should now light up. Click on the LED on/off button again in the application window to turn off the button. Repeat as necessary  DSCF3651 | ⎕ |
|  | To test the System Pause button, press and hold down the System Pause button like shown:  DSCF3649  On the application window the System Pause button indicator should now change state to ‘ON’. Once satisfied with the result, the button may be released  latch_on | ⎕ |
|  | Confirm that the Latch signal indicator is also in the on position.  latch_on | ⎕ |
|  | [Optional step]  To retest the Latch signal indicator, click on the ‘Reset’ button in the application window. This will reset the latch to off state:  screen3  When ready, repeat steps 5 and 6. | ⎕ |
|  | Next, test the LED light on the System Pause button by clicking on the LED on/off button in the application window.  latch_on  The System Pause button should now light up.  DSCF3652 | ⎕ |
|  | When finished, press the ‘Quit’ button to close the application. A confirmation dialog window will appear, click ‘yes’ to confirm closing the application. |  |

# Approvals

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| --- | --- | --- | --- |
|  | **Printed Name** | **Signature** | **Date** |
| **Completed by** |  |  |  |
|  |  |  | 5 |
| **Reviewed by** |  |  |  |

The Appendices are not required to be retained in executed documentation.