| g GE Energy | **Functional Testing Specification** |
|---|---|
| ***Inspection & Repair Services***<br>***Louisville, KY*** | **LOU-GEF-IFI32**<br>1050 Input Board |

## Test Procedure for IFI32 Printed Circuit Board

**DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column**

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| A | Initial release | Rick Diercks | 02/05/2008 |
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| PREPARED BY | REVIEWED BY | REVIEWED BY | QUALITY APPROVAL |
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| Rick Diercks | | | Charlie Wade |
| **DATE** | **DATE** | **DATE** | **DATE** |
| 02/05/2008 | | | 2/5/2008 |

Functional test procedure for IFI32 Printed Circuit Board

## 1. SCOPE

**1.1** This specification provides the Engineering Requirements for testing the IFI32 printed circuit board. The process applies IFI32 and IFI32B boards model number 44A398712-G01.

## 2. STANDARDS OF QUALITY

**2.1** Refer to the current revision of the IPC-A-610 standard for workmanship standards.

## 3. APPLICABLE DOCUMENTS

**3.1** The following document(s) shall form part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue shall apply.

| | | |
|---|---|---|
| **3.1.1** | **GEK-36093** | Diagnostic Software for 1050T Controls |
| **3.1.2** | **GEK-71632** | Diagnostic Software for 1050MC Controls |
| **3.1.3** | **GEK-45668** | Computer Access Panel |
| **3.1.4** | **44C389938** | Schematics |

## 4. ENGINEERING REQUIREMENTS

**4.1** Description

The Input Filter and Processor Bus Interface circuits are designed to interface contact operation such as those found on pushbutton, relay, etc., with the processor bus. Each board contains thirty-two identical filter elements and the necessary control and interface circuits to permit gating the logic level output signals from these filters onto the processor bus in 8-bit bytes.

**4.2** Equipment Cleaning

**4.2.1** Equipment should be clean and free of debris prior to applying power unless performing an initial check. Refer to the local documented procedures for cleaning guidelines.

**4.3** Equipment Inspection

**4.3.1** Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:

- **4.3.1.1** Wires broken or cracked
- **4.3.1.2** Terminal strips / connectors broken or cracked
- **4.3.1.3** Loose wires
- **4.3.1.4** Components visually damaged
- **4.3.1.5** Capacitors leaking
- **4.3.1.6** Solder joints damaged or cold
- **4.3.1.7** Circuit board burned or de-laminated
- **4.3.1.8** Printed wire runs burned or damaged

**EQUIPMENT REQUIRED**

**4.4** The following equipment is required to perform the process requirements. Equipment may be substituted provided that all accuracy's and test ratios are equivalent or better.

| Qty | Reference # | Description |
|---|---|---|
| 1 | GE 1050T & MC PWM Control | CPU3 Model |
| 1 | GE Computer Access Panel | External Interface |
| 1 | Diagnostic Tape Specific to Control | Diagnostic Tape |
| 1 | Executive Tape Specific to Control | Executive Tape |
| 1 | Part Program | Exercise Tape |
| 1 | Axis Cart | Motion Cart for Control |
| 1 | Fluke 87 | Multimeter |
| 1 | IF input Switch test Panel | Input Test Switches |

## 5. TESTING PROCESS

**5.1** Diagnostic Test

**5.1.1** Configure the IFI32 Circuit Board as MC IF#3 per enclosed table.

**5.1.2** Install IFI32 board in 1050MC Plug IF#3 Cable into lower PL.

**5.1.3** Load the Diagnostic.

**5.1.3.1** Once the tape is fully loaded it will rewind back to the beginning (Before Test No. 1). The Display should show: Depress "Control OFF", then ON, follow this instruction at this time. If the Computer Access Panel is hooked up you will also have to hit the RUN switch to start the control's Diagnostic program.

**5.1.4** Setup the control for testing.

**5.1.4.1** Depress **"Cycle Start"** (check to see if there are 3 IF boards.

**5.1.4.2** Depress **"Option Stop"** button (Cycle Start and Option Stop push button will quit flashing).

**5.1.4.3** Test All Board Test; depress "**Cycle Start "**to run test. If all pass go on to Mode One Test (Depress "**Next"** than enter 1 from keyboard. Run for 1 to 2 hours.

** **If there is no Errors go on to Functional Test.**

**5.2** Functional Test

**5.2.1** Running IFI32 as IF#1 (Loading Exec and running Part Program)

**5.2.1.1** Load Executive Tape.

**5.2.1.2** When completed turn Mode switch to AUX DATA then push I on Keyboard, Display will read IF

**5.2.1.3** Depress **"NEXT" to IF 4**

**5.2.1.4** Turn on Switch on IF Test Panel SW #01 to #16 there should be all 1 on Display then turn all switches off. Then Turn each Switch ON then OFF watching display (each time it should display a 1 then 0)

**5.2.1.5** Depress **"NEXT" to IF 5**

**5.2.1.6** Turn on Switches on IF Panel SW#16 to #32 there should be all 1s on Display then turn them all off. Then turn on each Switch ON then OFF (each time it should display a 1 then 0).

**5.2.1.7** Turn Control off

**5.2.1.8** Change IF#3 Plug from Lower to Upper PL, and repeat steps 5.2.1.1 to 5.2.1.7.

**5.2.1.9** Remove IFI32 board from 1050MC and strap it for 1050T IF#1.

**5.2.1.10** Install in 1050T PWM Drive Control and load Executive Tape. **(Turn off Control)**

***5.2.1.11*** After Tape is loaded, Run Part Program Tape.

***5.2.1.12*** Turn on Control and Axis Cart Push RUN on Computer Access Panel, then Depress Control **"ON"** to take control out of E-Stop then depress **"CYCLE START".** Part Program should run.

***5.2.1.13*** Run all of Part Program after it is finished Shut down and remove IFI32.

***5.3 ***TEST COMPLETE ******

## 6. REFERENCES

None