g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-125D460RA**

Test Procedure for a Fitchburg control card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	G. Chandler	6/5/2014
B			
C			

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DATE	**DATE**	**DATE**	**DATE**
6/5/2014			6/5/2014

1. SCOPE

1.1 This is a functional testing procedure for a 125D460RA Fitchburg card.

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 Check board's electronic folder for more information

4. ENGINEERING REQUIREMENTS

4.1 Equipment Cleaning
4.1.1 Equipment should be clean and free of debris prior to applying power unless performing an initial check. Refer to site specific SRA's for cleaning guidelines.
4.2 Equipment Inspection
4.2.1 Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:
4.2.1.1 Wires - broken, cracked, or loosely connected
4.2.1.2 Terminal strips / connectors - broken or cracked
4.2.1.3 Components - visually damaged
4.2.1.4 Capacitors - bloated or leaking
4.2.1.5 Solder joints - damaged or cold
4.2.1.6 Circuit board - burned or de-laminated
4.2.1.7 Printed wire runs / Traces - burned or damaged

5. EQUIPMENT REQUIRED

5.1 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
2		Fluke 87 DMM (or Equivalent)
2		+/- 15VDC Power Supplies
2		+/- 12VDC Power Supplies
1		O-Scope
1		125D460 Tester #54
1		125D460RA LED Adaptor Card

6. Modifications/Upgrades

6.1 Setup

6.1.1 This card is a direct replacement for the 125D460AD card.

6.1.2 Reference material: 165A696RF pages 41-43, 46, 165AA796CE.

6.1.3 With the Fitchburg tester in the off position, connect +/-15VDC, +/-12VDC and +5VDC supplies to the tester.

6.1.4 Install the UUT in the AD slot of the tester

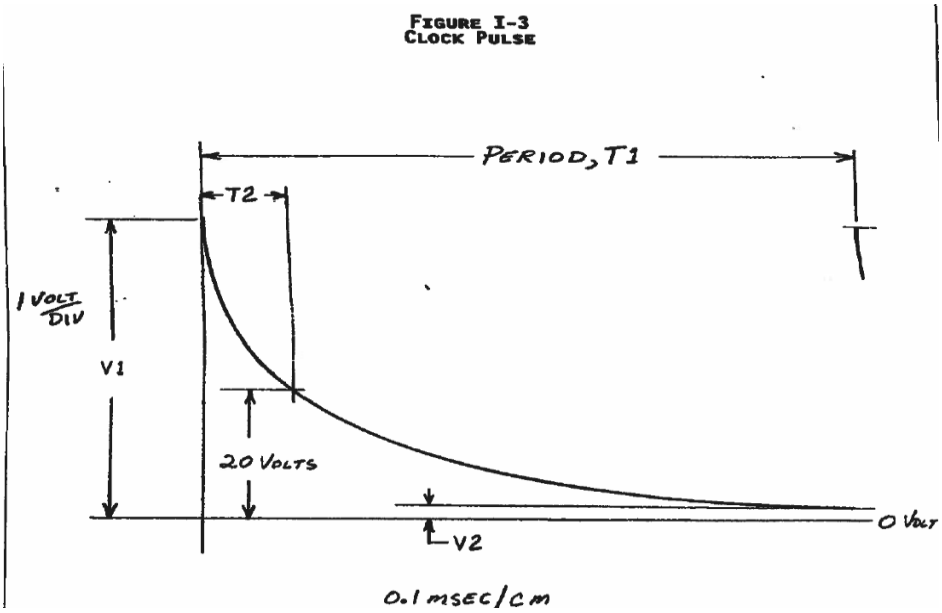
6.1.5 Install the LED adaptor card onto the A/D converted IC A4. Clip the orange test lead to TP403. Note: The card is conformal coated and it will have to be removed from the IC in order for the IC clip to make connection.

6.2 Testing - CLOCK PULSE CHECK:

6.2.1 With SW1 and SW2 on the test box in the off position apply power to the UUT and verify the following:

6.2.2 +15 supply is < 30ma, -15 supply is < 45ma, +5 supply is <130ma.

6.2.3 With an oscilloscope set at 1 v/div, .2msec sweep compare the wave form to figure I-3. Verify V1 is < 7.0v, V2 is .5V max and T2 is .2msec minimum. See figure I-3 below.



6.3 Testing - A/D CONVERTER CALIBRATION:

6.3.1 Turn the TESTER P1 fully CCW and add a jumper between TP403 and TP409.

6.3.2 Adjust BOARD P1 to the edge of where all LEDs on the adaptor card are off.

6.3.3 Disconnect the jumper between JP403 and JP409 and adjust TESTER P1 to obtain -5VDC +/- .01V at TP409.

6.3.4 Adjust P2 on the card until LED 12 only is illuminated on the adapter card.

6.3.5 Turn TESTER P1 fully CCW and add a jumper between TP403 and TP409.

6.3.6 Verify TP411 is 0.0VDC +/- .1VDC.

6.3.7 Adjust P3 on the card to get 0.0VDC +/- .01VDC at TP402.

6.3.8 Disconnect the jumper between TP403 and TP409 and adjust TESTER P1 to -5VDC +/- .01VDC at TP049.

6.3.9 Verify -5VDC +/- .01VDC at TP411.

6.3.10 Adjust P4 on the card to get -5VDC +/- .1VDC at TP402.

6.4 Testing - UPDATE DELAY CHECK:

6.4.1 Adjust TESTER P1 for -2VDC +/-.01VDC at TP409.

6.4.2 With an O-scope in the dual trace mode, chopped, DC mode, both channels set at 1 V/div and a sweep time of .5sec, channel 1 at TP409 and channel 2 at TP402.

6.4.3 Turn SW1 on and verify .5sec +/- .5sec delay from the time channel 1 goes -2VDC to the time channel 2 goes to -2VDC.

6.4.4 Turn SW1 off.

6.5 Testing - SMF CHECK:

6.5.1 Adjust TESTER P1 for -2VDC +/- .01V at TP409.

6.5.2 Turn on SW2 and verify LED1 on the tester is illuminated.

6.5.3 Verify 0.0VDC +/- .01VDC at TP401. Vary TESTER P1 while monitoring TP404 to verify the voltage at TP404 does not change.

6.5.4 Apply pot sealer on all pots.

6.6 ***TEST COMPLETE ***

7. Notes

7.1 Post Testing Burn-in Required _X_ Yes ___ No

Note: All MARK I, II, & III Turbine related cards require a post testing burn-in of 100 hours.

7.1.1 Apply BUS or Operational power to the card for a period of 100 hours.

7.1.2 Re-test card while warm using the above procedure.

7.2 ***TEST COMPLETE ***

8. Notes

8.1 None at this time.