g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**148D1647Gx**

Test Procedure for a 148D1647G0004

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Scott Cash	12-20-2017
B			
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Scott Cash			L. Groves
DATE	**DATE**	**DATE**	**DATE**
11-2-2017			12/21/2017

1. SCOPE

1.1 This is a functional testing procedure for a 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

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 the local documented procedures 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
1		Appropriate connector breakout box for 125xxx boards
2		Dual Tenma Power supply or similar
1		Switch box for connections to breakout box
2		Fluke meters to measure current.

6. TESTING PROCESS

6.1 Setup

6.1.1 Setup breakout box, switches and power supply per drawing in section 7.

6.2 Testing Procedure

6.2.1 Wire UUT per diagram in section 7.

6.2.2 Power up UUT.

6.2.3 Use 124 ohm ISV resistor to start.

6.2.4 Verify +/- 15 Vdc at TP1 and TP2.

6.2.5 Set Voltage source connected to pin 11 at 0 Vdc verify Pin 9 is at 0 Vdc.

6.2.6 Set VR2 and VR54 full CCW. Set pin 11 to 1 Vdc and verify 3.9-4.2 Vdc at pin 10.

6.2.7 Verify .09 to .1 ma on current meter B connected to pins 12 and 13.

6.2.8 Set VR2 full CCW and VR54 full CW. Set 1 Vdc on pin 11 and verify -4.8 to -5.2 Vdc on pin 10.

6.2.9 Change ISV resistor to 249 ohms and verify there is very little change to voltage at pin 10 and current on meter A. Set resistor back to 124 ohms.

6.2.10 Adjust VR2 for .4 Vdc at TP6.

6.2.11 Verify between .2 and .23 ma on current meter B between pins 12 and 13.

6.2.12 Change ISV resistor to 249 ohms and verify there is very little change to voltage at pin 10 and current on meter A. Set resistor back to 124 ohms.

6.2.13 Use a digital Tektronix scope to make following measurements and adjustments.

6.2.14 Adjust VR50 for 6 Vac RMS at TP12.

6.2.15 Verify signal at TP12 is between 3 and 3.4 Khz.

6.2.16 Verify the oscillator signal at TP12 restarts after the following conditions.

6.2.16.1 Remove both the +/- 22 Vdc at the same time and reapply.

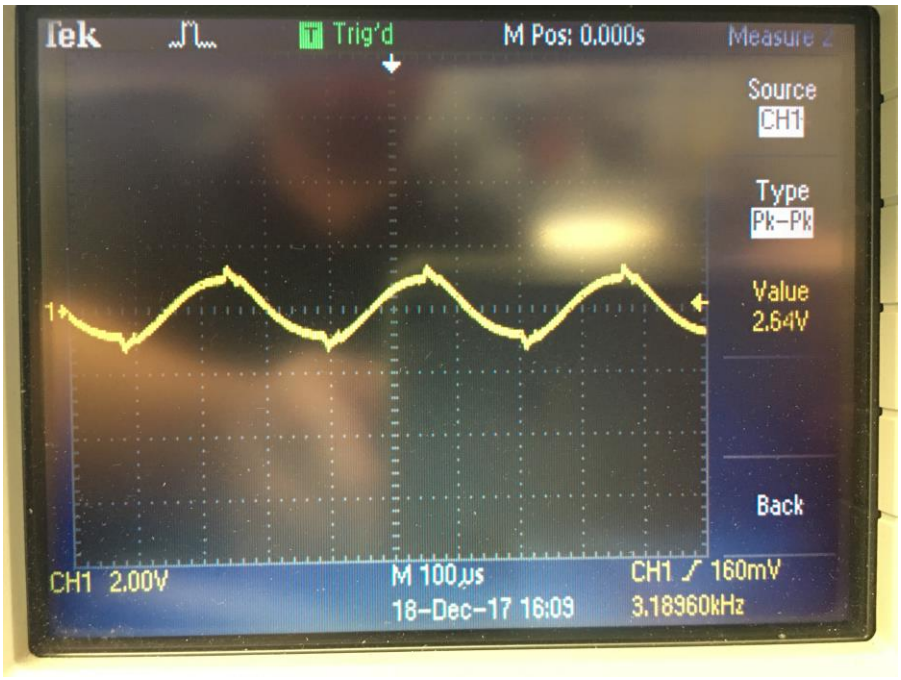
6.2.16.2 Remove the + 22 Vdc and reapply.

6.2.16.3 Remove the -22 Vdc and reapply.

6.2.17 The board should be stable at room temp by this time, verify the oscillator signal at TP 12 signal doesn't vary more that .06 Vdc.

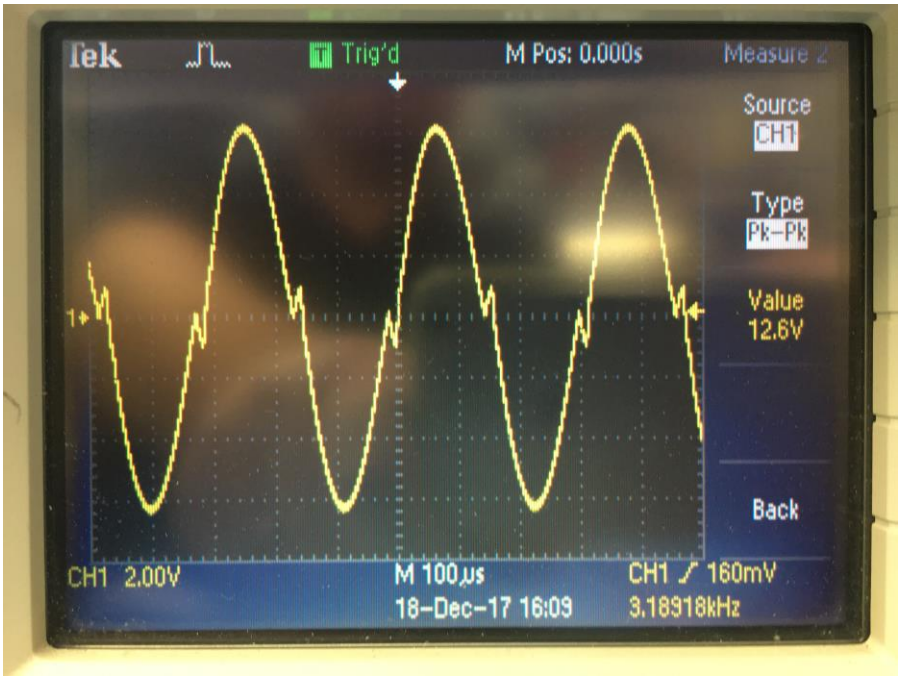
6.2.18 Note: There is a hump on the shaft of the Transducer approximately 8.5" from the threads, this is the Top Stop (TS), six inches back toward the threads it the Bottom Stop (BS). They are marked on the 8" Transducer, if you run the transducer in and out a few times while watching the scope you will see the stops on the scope. Inserted is BS and extended it TS.

6.2.19 With Transducer at TS (extended) verify 2-3 Vac 3 Khz at TP7. See below.



6.2.20

6.2.21 With Transducer at BS (Inserted) verify 12-13 Vac 3 Khz at TP 7. See below.

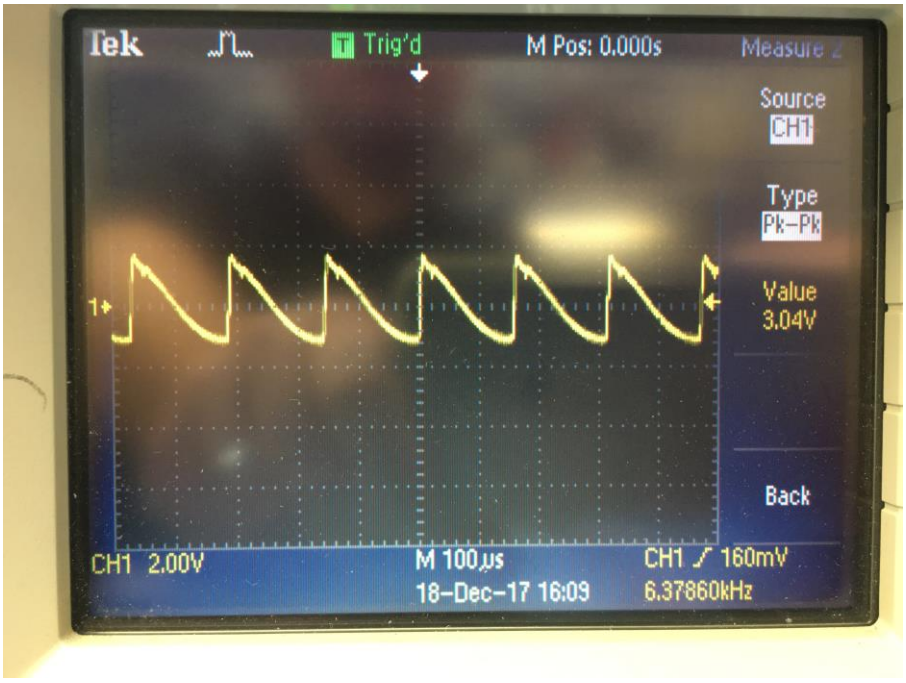


6.2.22

6.2.23 With Transducer at BS (Inserted) verify 12.5-13 Vp-p at TP52. See below.

6.2.24

6.2.25 With Transducer at TS (extended) verify 3.0 to 3.2 Vp-p at TP52. See below.



6.2.26

6.2.27 Set TP8 to 0 Vdc with transducer.

6.2.28 Verify TP13 is also at 0 Vdc. If not it can be set to zero with VR53.

6.2.29 Set TP8 at 1 Vdc with the transducer. Set VR4 to full CW. Verify -6.5 to -7.9 Vdc TP13.

6.2.30 Set VR4 to full CCW and verify TP13 is between -1.24 Vdc and -1.18 Vdc.

6.2.31 Test complete.

- ******TEST COMPLETE ******

Section 7