



GE Energy

Functional Testing Specification

Parts & Repair Services
Louisville, KY

LOU-GED-IC3600AMLB1

Test Procedure for a Single End Multiplier Card

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DATE 10/14/2013	DATE	DATE	DATE 10/14/2013

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1. SCOPE

1.1 This is a functional testing procedure for a Single End Multiplier 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
1		Fluke 87 DMM (or Equivalent)
2		15VDC (+/-) Power supplies
1		10VDC Power Supply
1		2K Ohm Resistor

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6. Testing Process

6.1 Setup

- 6.1.1 Fill out. Apply +15Vdc to pin 27.
- 6.1.2 Apply -15Vdc to pin 29
- 6.1.3 Apply com to pin2
- 6.1.4 Allow card to warm up for 5 min before proceeding.
- 6.1.5 Connect a 2K ohm resistor from pin 48 to com.
- 6.1.6 Connect pin 36 to pin 48.
- 6.1.7 Connect pins 14 and 42 to com.
- 6.1.8 Adjust pot R2 for 0Vdc +/- 1mv at pin 48.

6.2 Testing Procedure

- 6.2.1 Fill out. Remove pins 14 and 42 from com and connect a separate precision power supply to pins 14 and 42 with com to pin 2.

6.2.2 MULTIPLY MODE:

- 6.2.3 Apply +10VDC to pin 14 and verify 0Vdc +/- 100mv at pin 48.
- 6.2.4 Return pin 14 to 0Vdc.
- 6.2.5 Apply +10VDC to pin 42 and verify 0Vdc +/- 100mv at pin 48.
- 6.2.6 Return pin 42 to 0Vdc.
- 6.2.7 Apply +5Vdc to both pins 14 and 42 and adjust R1 for 2.5Vdc +/- 1mv at pin 48
- 6.2.8 Apply +1Vdc to both pins 14 and 42 and verify 100mv +/- 1mv at pin 48.
- 6.2.9 Apply +10Vdc to both pins 14 and 42 and verify 10Vdc +/- .1v at pin 48.
- 6.2.10 Return pins 14 and 42 to 0Vdc.

6.2.11 DIVIDE MODE:

- 6.2.12 Swap connection at pin 42 with pin 36.
- 6.2.13 Reverse polarity of power supplies connected to pins 14 and 36 (applying neg. voltage).
- 6.2.14 Apply -1Vdc to both pins 14 and 36 and verify 10Vdc +/- 100mv at pin 48.
- 6.2.15 With pin 36 remaining at -1vdc apply -5Vdc at pin 14 and verify 2Vdc +/- 20mv at pin 48.
- 6.2.16 Raise the voltage at pin 14 to -10Vdc and verify 1Vdc +/- 10mv at pin 48.
- 6.2.17 Raise the voltage at pin 36 to -5Vdc and verify 5Vdc +/- 50mv at pin 48.

6.3 ***TEST COMPLETE ***

7. Notes

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7.1 None at this time.