



GE Energy

Functional Testing Specification

Parts & Repair Services
Louisville, KY

LOU-GEF-REG8x

Test Procedure for REG8B and REGC Memory Power Supply Cards

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DATE 02/15/2008	DATE 11/19/2010	DATE	DATE 2/15/2008

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Functional test procedure for REG8B and REGC cards

1. SCOPE

- 1.1 This specification provides the Engineering Requirements for testing REG8B and REG8C. The process applies only to control cards model number 44A399746-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 44C283983 Schematics

4. ENGINEERING REQUIREMENTS

4.1 Description

- 4.1.1** The REG8 board was designed for use in a memory power system with battery backup capability. The board contains a +12V Regulator, +5V Regulator, -5V Regulator, Over voltage Protector, Under voltage Detector, Input Power Monitor Battery Monitor, Power Fail Detector, Voltage Booster, CMOS Supply and a Reference supply. Input power is supplied when the A.C. has been removed. Each regulated output voltage is available at two terminal board terminals. Maximum output currents are as follows: +12V @800MA, +5V @ 2.4A, and – 5V @ 35MA. A diode switch, external to REG8, automatically transfers the D.C. input between the 15V supply and 12V battery when A.C. power is removed or applied.

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 site specific SRA's 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

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	REG8 Board Tester	REG8 Tester with Load.
1	DC Power Supply	DC Power Supply +16V @ 3Amp
1	DC Power Supply	DC Power Supply +5V @ 1Amp
1		Fluke 87 Multimeter

6. Testing

6.1 Connections

- 6.1.1** Remove Screw Jumper at A and Install REG8 into REG8 Board Tester
- 6.1.2** Connect Output Load cables to 1TB A, E, H, and M
- 6.1.3** Connect Test Cables to REG8 3TB-E, 3TB-H, and 3TB-J
- 6.1.4** Connect Test Cables to REG8 2TB-VB, 2TB-0V, and 2TB-VPS
- 6.1.5** Connect +16V Power Supply to REG8 Tester 0V and +16V.
- 6.1.6** Connect +5V Power Supply to Reg8 Tester 0V and +5V.
- 6.1.7** Connect 3 Volt Meters (Fluke) to output Voltage Cables +5V, +12, and -5V.

******Note keep Power Supply 0V separated.**

- 6.1.8** Connect COM Cable to Meters (connect meters COM together).

6.2 Power On Test

- 6.2.1** Turn on +16V power supply.
- 6.2.2** Turn on +5V power supply.
- 6.2.3** Using a Volt Meter measure the output voltage on 3TB-F on REG8 Board
Should be 0 Volts, Depress "**RESET BUTTON**" voltage should go to @ +5V.

Output Voltage Meters should be:

- A. 1TB-A +5.00V - 5.05V (P3 adjustment).
- B. 1TB-E +12.00V - +12.05V (P4 adjustment).
- C. 1TB-M -5.00V - -5.05V (P2 adjustment).

If not Adjust Regulator Pots

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6.2.4 “With Meter Check TS-2 Adjust P1 for +4.75V (TS-2 is the 16pin IC socket on board).

6.2.5 Check **ALL Power UP** with meter check 3TB-D should be @ +5V.

6.2.6 POWER FAILURE TEST

6.2.6.1 With meter at REG8 3TB-B it should be @ 5V depress “**Power Fail Button**” Meter output should drop to @ 0V (and go back to +5V when button is not pushed)

6.2.7 UNDER VOLTAGE TEST FOR REG8C ONLY

6.2.7.1 REG8C ONLY: With meter at REG8 3TB-B, Turn P3 counter-clockwise until board faults out and output voltages turn off, meter will drop to 0V. Turn P3 back (@ middle position) depress “**RESET BUTTON**” Output voltages should come up readjust P3 for +5V Output.

6.2.7.2 REGB ONLY: With meter at REG8 TS-13, Turn P3 +5V Pot counter-clockwise until board faults out and output voltage turn off, meter will drop from (10.3 to 11V) to 0V. Turn P3 back (@ middle position) voltage should return to (10.3 to 11V).

6.2.8 OVERVOTAGE TEST-----* This test will damage board if Jumper A screw is in.**

6.2.8.1 With Meter at TS-1 Turn P4 clockwise (increasing +12V Output to over voltage) until meter drops to @ .7V, Turn P4 back to +12V output **immediately!!! Turn +16V power supply off then back on, Depress RESET BUTTON.** REG* Board should power up and adjust P4 for +12V output voltage should be good.

DO NOT LET OVER VOLTAGE CROWBAR SCR TO STAY ON VERY LONG SHUT DOWN +16V POWER SUPPLY ASAP!!!!

6.2.9 TURN OFF BOTH POWER SUPPLIES AND PUT JUMPER A BACK INTO REG8 BOARD.

6.2.10 Turn on both Power Supplies.

6.2.11 Depress **RESET BUTTON.**

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6.2.12 Output Meters should Display Voltages +5V +12, and –5V if not adjust Pot P3, P4, and P2 to obtain proper Voltages.

6.2.12.1 RUN REG8 for 1 to 2 hours with load.

6.2.12.2 Turn off Power Supplies remove REG8 from Tester

6.3 END OF TEST

7. Notes

7.1 None at this time.

8. Attachments

8.1 None at this time.