



GE Energy

## Functional Testing Specification

Parts & Repair Services  
Louisville, KY

LOU-GED-DS3800NASB

### Test Procedure for a DS3800NASB Card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Steve Pharris	08/04/08
B	Corrected typographical errors	Steve Pharris	8/10/10
C	Improved reliability and added calibration steps 6.2.7 thru 6.2.10	Steve Pharris	09/09/13

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<b>DATE</b> 08/04/2008	<b>DATE</b>	<b>DATE</b>	<b>DATE</b> 8/4/2008

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## 1. SCOPE

1.1 This is a functional testing procedure for a DS3800NASB 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 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
2		Fluke 87 DMM (or Equivalent)
1		Variable AC Power Supply (variac)
1		DC Power Supply
1		Oscilloscope
1		220 Ohm 10W Resistor

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## 6. TESTING PROCESS

### 6.1 Setup

- 6.1.1 Set DC power supply to 28VDC and connect to JP1(+) and JP3(common).
- 6.1.2 Connect 1TB1 to 1TB9.
- 6.1.3 Connect 1TB2 to 1TB10.
- 6.1.4 Connect Variac set for 120VAC to DMM (to monitor incoming AC) and to 1TB1 and 1TB2.
- 6.1.5 Connect COM from DC power supply to COM on DMM #2.

### 6.2 Testing Procedure

- 6.2.1 Apply +28VDC to card.
- 6.2.2 Verify TP7 = 5VDC +/- .3VDC (This is the 5VDC regulator circuit. If this step fails do not continue with test until repaired).
- 6.2.3 Apply 120VAC and adjust if necessary.
- 6.2.4 Verify the following points have a 5Vpk-pk square wave at 60hz:  
TP1, TP2, TP11, TP12, TP13, TP14, JR01, JS01, JT01, JR03, JS03, JT03, and JC01.
- 6.2.5 Remove connection between Com from DC power supply to DMM #2 and connect Com from DMM #2 to ACOM Post.
- 6.2.6 Verify 120VAC on DMM #1 and adjust if necessary (Continue to monitor this voltage, it will be used to cal R105 and R106).
- 6.2.7 Verify TP3 varies from 8.5VDC to 7VDC as R105 is adjusted (actual voltage may go beyond 8.5V or 7V this is OK as long as the range specified is achieved).
- 6.2.8 Set R105 for 8VDC +/-10mV at TP3.
- 6.2.9 Verify TP4 varies from 8.5VDC to 7VDC as R106 is adjusted (actual voltage may go beyond 8.5V or 7V this is OK as long as the range specified is achieved).
- 6.2.10 Set R106 for 8VDC +/-10mV at TP4.
- 6.2.11 Verify 8VDC at the following points:  
JR07, JR09, JS07, JS09, JT07, and JT09
- 6.2.12 Lower incoming AC to 105VAC.
- 6.2.13 Verify TP3 and TP4 = 6.93 to 7.07VDC.
- 6.2.14 Return incoming AC to 120VAC.
- 6.2.15 Verify TP3 and TP4 return to 8VDC.
- 6.2.16 Connect 220 Ohm resistor across JA1 and JA2.
- 6.2.17 Connect DMM #2 across 220 Ohm resistor (Com side of DMM to JA2).

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- 6.2.18** Verify 0VDC on DMM.
- 6.2.19** Connect three mini grabber leads from the following points but leave the other ends unconnected until instructed to use them. They will be used to test the logic portion of this card. JR05, JS05, and JT05
- 6.2.20** Verify 28VDC on DMM across resistor if any 2, or all 3 of the previous connections are tied Low.
- 6.2.21** Verify 0VDC on DMM if any one connection is tied Low.
- 6.2.22** Trip the circuit by tying any two of the points listed above to TTL Low so that there is 28VDC across the resistor.
- 6.2.23** Verify that when 28VDC is present across the resistor that the following points are TTL High: TP5 and TP10.
- 6.2.24** Remove the connections made in step **(6.2.22)** so that the 28VDC output goes to 0VDC.
- 6.2.25** Verify the following points are TTL Low TP5 and TP10.
- 6.2.26** Verify short between 1TB3 and 1TB6.
- 6.2.27** Seal R105 and R106.

**6.3 \*\*\*TEST COMPLETE \*\*\***

**7. NOTES**

**7.1** None at this time.

**8. ATTACHMENTS**

**8.1** None at this time.