GE Energy	Functional Testing Specification
Parts & Repair Services *Louisville, KY*	LOU-GED-DS3800NECA

Test Procedure for a DS3800NECA card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release - Transferred information from the card's 9AA sheet to this format.	J. Wychulis	1/9/2012
B			
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
J. Wychulis			Charlie Wade
DATE	DATE	DATE	DATE
1/9/2012			1/9/2012

1. SCOPE

1.1 This is a functional testing procedure for a DS3800NECA 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
3		One 5VDC and two 15VDC supplies
1		DS3800DECA - Daughter board
1		Rainbow Box

6. Modifications/Upgrades

6.1 Check Orange Book for any modifications or upgrades.

9.1.0 SCOPE

The following describes the set up and test procedure for the PWB DS3800NECA.

9.2.0 SPECIAL TEST EQUIPMENT

NONE

9.3.0 POWER SUPPLY REQUIREMENTS

POWER	PINS
P5	JP2
DCOM	JP3
P15	JP6
N15	JP5
ACOM	JP4

Tie all commands together for test.

9.4.0 PRELIMINARY SETUP

Set R6 Max CCW

Put SW2 in center position

Connect JE18 to +5V.

9.5.0 DAUGHTER BOARD

Use Daughter Board DS3800DECA.

Set R1, R3-R5 Max CCW

Set R2 Max CW

Set R7 at 50

Set BJ1 and BJ2 in 3 CT Pos

Set BJ3 and BJ4 in EFLT Pos

REV. 1	REV. 4	REV. 7	PRINTS TO DL109 PRI AHEL	ENGINEER RCV	GENERAL ELECTRIC	Test Specs
REV. 2	REV. 5	ISSUED 5-6-82			DSD	
REV. 3	REV. 8	MADE BY R. Vanderpool			SALEM, VA. U.S.A.	DS3800NECA CONT. ON SH 9BA SH. NO. 9AA

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9.6.1 ELECTRICAL TEST

1. INPUTS — OUTPUTS (ALL ± .1V)

	JD4	JD3	JD2	TP1	TP2	TP3	JE11
A.	COM	COM	COM	0V	0V	0V	0V
B.	+10.0V	COM	COM	+4.5V	0V	-4.5V	-4.2V
C.	-10.0V	COM	COM	-4.5V	0V	+4.5V	-4.2V
D.	COM	+10.0V	COM	-4.5V	+4.5V	0V	-4.2V
E.	COM	-10.0V	COM	+4.5V	-4.5V	0V	-4.2V
F.	COM	COM	+10.0V	0V	-4.5V	+4.5V	-4.2V
G.	COM	COM	-10.0V	0V	+4.5V	-4.5V	-4.2V

2. Remove inputs from JD2, JD3 and JD4.

3. INPUTS — * OUTPUTS (TP5,TP8,JE14 = ± .05V)

	JE20	JE17	TP5	TP8	JE14	CR15	CR21	JA14	JB14
A.	+1.00V	+1.00V	0V	0V	0V	OFF	OFF	"0"	"0"
B.	+1.00V	COM	-1.0V	+1.0V	+.15V	OFF	X	X	X
C.	-1.00V	COM	+1.0V	+1.0V	X	OFF	X	X	X
D.	-4.50V	COM	X	X	X	ON	ON	"1"	"1"

4. Remove inputs from JE20 and JE17 then reset card by pressing SW1.

5. INPUTS — * OUTPUTS (TP6,TP9,JE14 = ± .05V)

	JE4	JE6	TP6	TP9	JE14	CR15
A.	+1.00V	+1.00V	0V	0V	0V	OFF
B.	+1.00V	COM	-1.0V	+1.0V	+.15V	OFF
C.	-1.00V	COM	+1.0V	+1.0V	X	OFF
D.	-4.50V	COM	X	X	X	ON

6. Remove inputs from JE4 and JE6 then reset card by pressing SW1.

7. INPUTS — * OUTPUTS (TP7,TP10,JE14 = ± .05V)

	JE22	JE24	TP7	TP10	JE14	CR15
A.	+1.00V	+1.00V	0V	0V	0V	OFF
B.	+1.00V	COM	-1.0V	+1.0V	+.15V	OFF
C.	-1.00V	COM	+1.0V	+1.0V	X	OFF
D.	-4.50V	COM	X	X	X	ON

* - X = Don't Care, "_" = Logic Level

REV. 1 OEA DGJ 830309	REV. 4	REV. 7	PRINTS TO DL109 PRI BHEL	ENGINEER RCV	GENERAL ELECTRIC DSD SALEM, VA. U.S.A.	Test Specs
REV. 2	REV. 5	ISSUED 5-6-82				D S 3 8 0 0 N E C A
REV. 3	REV. 6	MADE BY R. Vanderpool				CONT. ON SH. 9CA SH. NO. 9BA

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8. Remove inputs from JE22 and JE24 then reset card by pressing SW1.

9. With inputs setup as in Step 7C, verify JA14 and JB14 changes from a "0" to a "1" when SW2 is switched in either position. Also, CR20 should turn on.

10. Return SW2 to center position.

11. Verify that if either of the following conditions are met, CR21 turns on. After each input is tried, return it back to its original state.

    JE18 Floating

    JE23 to COM

    JE25 to COM

12. Verify that if any of the following inputs are tied to COM, the associated LED turns on. At all other timee the LED should be off. After each input is tried, return it back to its original state.

INPUT	LED
JE1	CR22
JE3	CR23
JE5	CR24
JE2	CR25

13. With JE26 open, verify JA16 and JB16 are "1".

14. Tie JE26 to COM and verify JA16 and JB16 are "0". Leave JE26 tied to COM.

15. Close SW2 and JA16 should go to "1".

16. Open SW2.

17. Adjust R6 CW until JA16 goes to a "1". At that point, U12-6 should be +5.00 $\pm$ .25V.

18. Adjust R6 back fully CCW.

19. Apply +1.00V at TP28, TP29, and TP30.

20. Verify +5.0 $\pm$ .2V at TP31 and -1.4 $\pm$ .1V at TP27.

21. Individually open the inputs specified in Step 19. As each input is opened, TP31 should go to +4.0 $\pm$ .2V and TP27 should go to -.9 $\pm$ .1V.

22. Close SW2 and verify TP18 is +7.25 $\pm$ 1.5V.

23. Open SW2

24. Apply +1.00V at JA9 and verify U18-12 is half of input.
25. Open JA9 and JB9.
26. Tie JA19 to COM.
27. Apply +6.00V through a 2.2K resistor to JA20 and verify CR36 turns on.
28. Open JA19 and JA20 inputs.
29. Tie JB19 to COM.
30. Apply +6.00V through a 2.2K resistor to JB20 and verify CR37 turns on.
31. Open JB19 and JB20 inputs.
32. Tie JA17 to COM.
33. Apply +6.00V through a 2.2K resistor to JA18 and verify CR18 turns on.
34. Open JA17 and JA18 inputs.
35. Tie JB17 to COM.
36. Apply +6.00V through a 2.2K resistor to JB18 and verify CR19 turns on.
37. Open JB17 and JB18 inputs.
38. Apply +5.00V to JA10 and +5.00V through a 10K resistor to JB10.
39. Open SW2.
40. Connect U15-2 and U15-5 to COM. (CR18 and CR19 should be on.).
41. With berg jumpers in positions per the table below, verify outputs TP18 and JE16.

BJ3	BJ4	JE16	TP18
EFLT	EFLT	"1"	0V
NFLT	EFLT	"0"	-5.0 $\pm$ .1V
NFLT	NFLT	"0"	-5.0 $\pm$ .1V
EFLT	NFLT	"0"	-3.4 $\pm$ .1V

42. Verify +11.3 $\pm$ .2V at U25-9 and -11.3 $\pm$ .2V at U25-6. (B30)
43. Return BJ3 and BJ4 to the EFLT position.
44. Close SW2.
45. Turn R7 fully CW and verify CR40 turns off.
46. Open SW2 and return R7 to "50".
47. Turn all power off and remove all inputs.

END OF TEST

*7.2 ***TEST COMPLETE ****

8. Notes

8.1 None at this time.

9. Attachments

9.1 None at this time.