g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-DS3800NRFA**

Test Procedure for a DS3800NRFA

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Steve Pharris	6/23/2010
B			
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Steve Pharris			Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
6/23/10			6/23/2010

1. SCOPE

1.1 This is a functional testing procedure for a DS3800NRFA.

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)
1		Millivolt DC Supply
1		Rainbow Box
1		DS3800 Power Supply
1		DS3800 Connector Box
1		NRFA Daughter Card Emulator

6. TESTING PROCESS

6.1 Setup

6.1.1 Connect resistors from daughter card emulator to DB connector

6.1.2 Make the following connections and set switches as follows

PA1-PA9

SW81-PA55-L

SW82-PA50-L

SW83-PA80-H

SW84-PA76-L

SW85-PA68-L

6.2 Testing Procedure

6.2.1 Apply power

6.2.2 Verify PA22 = 14VDC

6.2.3 Using mV source apply –10VDC to PA17

6.2.4 Verify PA22 = -14VDC

6.2.5 Reverse polarity of mV source

6.2.6 Verify PA22 = 14VDC

6.2.7 Toggle SW81 H-L-H

6.2.8 Verify PA22 = -14VDC

6.2.9 Toggle SW82 H-L-H

6.2.10 Verify PA22 = 14VDC

6.2.11 Set switches as follows

SW81-H

SW82-H

SW83-L

SW84-L

SW85-H

6.2.12 Move mV source to PA11 and apply –10VDC

6.2.13 Verify PA22 = 14VDC

6.2.14 Reverse polarity of mV source

6.2.15 Toggle SW85 H-L-H

6.2.16 Verify PA22 = -14VDC

6.2.17 Toggle SW81 H-L-H

6.2.18 Verify PA22 = 14VDC

6.2.19 Verify “FLT” LED is on

6.2.20 Set SW83 H

6.2.21 Verify “FLT” LED is off

6.2.22 Verify “RUN” LED is off

6.2.23 Set SW81 L

6.2.24 Verify “RUN” LED is on

6.2.25 Set SW81 H

6.2.26 Move mV source to PA60 and apply 3VDC

6.2.27 Verify PA10 = -12VDC

6.2.28 Reverse polarity of mV source

6.2.29 Verify PA10 = 12VDC

6.2.30 Verify PA19 = 12VDC

6.2.31 Reverse polarity of mV source

6.2.32 Verify PA19 = 0VDC

6.2.33 Verify PA16 = -12VDC

6.2.34 Reverse polarity of mV source

6.2.35 Verify PA16 = 0VDC

6.2.36 Remove connection at PA60

6.2.37 Verify 100K ohms between PA60 and PA21

6.2.38 Using mV source apply 1VDC to PA10

6.2.39 Verify PA6 = L

6.2.40 Decrease voltage at PA10 to 0VDC

6.2.41 Verify PA6 = H

6.2.42 Using mV source apply 10VDC to PA17

6.2.43 Verify PA12 = -14VDC

6.2.44 Reverse polarity of mV source

6.2.45 Verify PA12 = 14VDC

6.2.46 Using mV source apply 10VDC to PA10

6.2.47 Verify DB5 = -14VDC

6.2.48 Reverse polarity of mV source

6.2.49 Verify DB5 = 14VDC

6.2.50 Connect SW86 – PA65

6.2.51 Verify U4 Pin1 inversely follows SW86

6.2.52 Make the following connections and set all switches L

SW87-PA36

SW88-PA37

SW89-PA41

SW90-PA44

6.2.53 Verify “UVB” LED is on

6.2.54 Using SW87 through SW90 verify if any switch is H “UVB” LED is off

6.2.55 Verify if “UVB” LED is on that PA29 = L

6.2.56 Verify if “UVB” LED is off that PA29 = H

6.2.57 Remove connections at SW87 through SW90

6.2.58 Make the following connections and set switches as follows

SW87-PA38-L

SW88-PA42-L

SW89-PA33-L

SW90-PA72-L

SW91-PA31-L

SW92-PA30-H

SW93-PA35-L

SW94-PA28-L

6.2.59 Set SW83-H

6.2.60 Verify “UVA” LED is on

6.2.61 Verify PA61 = L

6.2.62 Verify “UVA” LED is off if any one of the following switches are reversed (only use one of the switches until you reach step **6.2.71**)

SW83

SW87

SW88

SW89

SW91

SW92

6.2.63 Verify “UV” LED is on

6.2.64 Verify PA49 = H

6.2.65 Toggle SW87 L-H-L

6.2.66 Verify “UV” LED is off

6.2.67 Verify PA49 = L

6.2.68 Toggle SW94 L-H-L

6.2.69 Verify “UV” LED is off

6.2.70 Verify PA49 = H

6.2.71 Repeat steps **6.2.62 – 6.2.70** using switches not used in step **6.2.62** until all switches have been used.

6.2.72 Verify PA24 = H if “UVA” LED is off

6.2.73 Verify PA24 = L if “UVA” LED is on

6.2.74 Remove connections at the following points

SW87

SW88

SW89

SW90

SW91

SW92

SW93

6.2.75 Make the following connections

SW87-PA46

SW88-PA69

SW89-PA74

SW90-PA78

SW91-PA25

SW92-PA53

SW93-PA51

SW95-PA32

SW96-PA39

6.2.76 Set SW87-L

6.2.77 Set SW88-H

6.2.78 Set SW89-H

6.2.79 Set SW90-H

6.2.80 Set SW91-H

6.2.81 Set all other switches L

6.2.82 Verify “PERM” LED is on

6.2.83 Verify PA71 = L

6.2.84 Set SW87-H

6.2.85 Verify “PERM” LED is off

6.2.86 Verify PA71 = H

6.2.87 Set SW87-L

6.2.88 Verify “PERM” LED is on

6.2.89 Verify PA71 = L

6.2.90 Set SW91-L

6.2.91 Verify “PERM” LED is off

6.2.92 Verify PA71 = H

6.2.93 Set SW91-H

6.2.94 Verify “PERM” LED is on

6.2.95 Verify PA71 = L

6.2.96 Connect PA67 to COM

6.2.97 Verify “M” LED is on

6.2.98 Remove connection at PA67

6.2.99 Verify “M” LED is off

6.2.100 Remove connection at SW83

6.2.101 Make the following connections (remove connection from switch side if tied to a switch)

PA55

PA50

PA76

PA68

PA65

(This should remove any connections at SW81, SW82, SW84, SW85, and SW86

6.2.102 Connect PA25-5VDC

6.2.103 Connect SW81-PA33, PA38, and PA42

6.2.104 Connect SW82-PA67 and set H

6.2.105 Move connection at SW95 to SW86 and set L

6.2.106 Connect SW83-PA69, PA74, and PA78 and set H

6.2.107 Connect SW84-PA53 and set L

6.2.108 Connect SW85-PA51 and set L

6.2.109 Move connection at SW96 to SW87 and set L

6.2.110 Set SW94-H

6.2.111 Verify PA49 = H

6.2.112 Set SW82-L

6.2.113 Set SW83-L

6.2.114 Set SW83-H

6.2.115 Verify “SUIC” LED turns off momentarily then re illuminates

6.2.116 Set SW83-L

6.2.117 Verify “SUIC” LED turns off momentarily then re illuminates

6.2.118 While performing the previous steps monitor PA62 and verify it switches from L to H

6.3 ***TEST COMPLETE ***

7. NOTES

7.1 None at this time.

8. ATTACHMENTS

8.1 None at this time.