g	GE Energy	**Functional Testing Specification**
	Parts & Repair Services *Louisville, KY*	**LOU-GED-DS3800NLIA**

Test Procedure for a DS3800NLIA card.

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1. **SCOPE**

   1.1 This is a functional testing procedure for a DS3800NLIA.

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		Rainbow Box
1		DS3800 Power Supply
1		DS3800 Connector Box
1		DS3800DLIA (Daughter Card)
1		Millivolt DC Supply

6. <u>**TESTING PROCESS**</u>

   6.1 **Setup**

       6.1.1 Connect PA1-PA9

       6.1.2 Connect daughter card

       6.1.3 Note (all voltages are positive unless otherwise noted)

   6.2 **Testing Procedure**

       6.2.1 Apply Power

       6.2.2 Using mV source apply .01VDC to PA44, PA46, and PA48

       6.2.3 Verify –1VDC at PA2, PA4, and PA6

       6.2.4 Reverse polarity of mV source

       6.2.5 Verify 1VDC at PA2, PA4, and PA6

       6.2.6 Reverse polarity of mV source

       6.2.7 Increase mV source to .05VDC

       6.2.8 Verify -5VDC at PA2, PA4, and PA6

       6.2.9 Verify 5VDC at PA27, PA30, and PA61

       6.2.10 Verify PA38=H

       6.2.11 Verify PA40=H

       6.2.12 Verify PA80=H

       6.2.13 Reverse polarity of mV source

       6.2.14 Verify 5VDC at PA2, PA4, and PA6

       6.2.15 Verify –5VDC at PA27, PA30, and PA61

       6.2.16 Verify PA38=L

       6.2.17 Verify PA40=L

       6.2.18 Verify PA80=L

       6.2.19 Using mV source apply 2VDC to PA18

       6.2.20 Verify PA17=4VDC

       6.2.21 Reverse polarity of mV source

       6.2.22 Verify PA17=-4VDC

       6.2.23 Using mV source apply 2VDC to PA32

       6.2.24 Verify PA17=-2VDC

       6.2.25 Reverse polarity of mV source

       6.2.26 Verify PA17=2VDC

       6.2.27 Using mV source apply 1VDC to PA29

6.2.28   Verify PA34=2VDC

6.2.29   Reverse polarity of mV source

6.2.30   Verify PA34 still =2VDC

6.2.31   Using mV source apply 2VDC to PA15

6.2.32   Verify PA34=4VDC

6.2.33   Reverse polarity of mV source

6.2.34   Verify PA34 still =4VDC

6.2.35   Verify PA28=-2.6VDC

6.2.36   Reverse polarity of mV source

6.2.37   Verify PA28 still =-2.6VDC

6.2.38   Using mV source apply 2VDC to PA20

6.2.39   Verify PA28=-2.6VDC

6.2.40   Reverse polarity of mV source

6.2.41   Verify PA28 still =-2.6VDC

6.2.42   Using mV source apply 3VDC to PA33

6.2.43   Verify PA31=2VDC

6.2.44   Verify PA19=-1VDC

6.2.45   Verify PA59=1VDC

6.2.46   Reverse polarity of mV source

6.2.47   Verify PA31=-2VDC

6.2.48   Verify PA19=1VDC

6.2.49   Verify PA59=-1VDC

6.2.50   Using mV source apply 3VDC to PA11

6.2.51   Verify PA13=2VDC

6.2.52   Verify PA19=1VDC

6.2.53   Verify PA24=-1VDC

6.2.54   Reverse polarity of mV source

6.2.55   Verify PA13=-2VDC

6.2.56   Verify PA19=-1VDC

6.2.57   Verify PA24=1VDC

6.2.58   Using mV source apply 3VDC to PA21

6.2.59   Verify PA12=2VDC

6.2.60   Verify PA24=1VDC

6.2.61   Verify PA59=-1VDC

6.2.62 Reverse polarity of mV source

6.2.63 Verify PA12=-2VDC

6.2.64 Verify PA24=-1VDC

6.2.65 Verify PA59=1VDC

6.2.66 Connect PA54-SW81 and set switch to L

6.2.67 Connect PA51-SW82 and set switch to L

6.2.68 Using mV source apply 10VDC to PA21

6.2.69 Verify "SUPP" LED = on

6.2.70 Verify PA76=H

6.2.71 Verify PA74=L

6.2.72 Verify PA67=H

6.2.73 Decrease voltage at PA21 to 0VDC

6.2.74 Verify "SUPP" LED = off

6.2.75 Verify PA76=L

6.2.76 Verify PA74=H

6.2.77 Set SW81-H

6.2.78 Verify PA67=L

6.2.79 Using mV source apply 3VDC to PA16

6.2.80 Verify PA10=3VDC

6.2.81 Verify PA47=-2.5VDC

6.2.82 Reverse polarity of mV source

6.2.83 Verify PA10=3VDC

6.2.84 Verify PA47=-2.5VDC

6.2.85 Using mV source apply 3VDC to PA22

6.2.86 Verify PA10=3VDC

6.2.87 Verify PA47=-2.5VDC

6.2.88 Reverse polarity of mV source

6.2.89 Verify PA10=3VDC

6.2.90 Verify PA47=-2.5VDC

6.2.91 Using mV source apply 3VDC to PA14

6.2.92 Verify PA10=3VDC

6.2.93 Verify PA47=-2.5VDC

6.2.94 Reverse polarity of mV source

6.2.95 Verify PA10=3VDC

6.2.96 Verify PA47=-2.5VDC

6.2.97 Using mV source apply 10VDC to PA14

6.2.98 Set SW81-L

6.2.99 Set SW82-L

6.2.100 Verify "OVA" LED = on

6.2.101 Verify PA60=L

6.2.102 Verify PA57=H

6.2.103 Verify PA55=L

6.2.104 Verify PA58=H

6.2.105 Decrease voltage at PA14 to 3VDC

6.2.106 Verify "OVA" LED = off

6.2.107 Verify PA60=H

6.2.108 Verify PA57=L

6.2.109 Verify PA55=H

6.2.110 Verify PA58=L

6.2.111 Using mV source apply 6VDC to PA68

6.2.112 Verify PA78=L

6.2.113 Verify PA71=H

6.2.114 Decrease voltage at PA68 to 3VDC

6.2.115 Verify PA78=H

6.2.116 Verify PA71=L

6.2.117 Connect PA42 to 15VDC

6.2.118 Verify PA66=H

6.2.119 Remove connection at PA42 and reconnect to 5VDC

6.2.120 Verify PA66=L

6.2.121 Connect PA70-SW83 set switch to L

6.2.122 Connect PA64-SW84 set switch to L

6.2.123 Verify U17 pin 11 follows SW83

6.2.124 Set SW81-H

6.2.125 Set SW82-H

6.2.126 Verify U17 pin 11 latches when tripped H

6.2.127 Set SW81-L

6.2.128 Set SW82-L

6.2.129 Set SW83-L

6.2.130 Verify U17 pin 11 = L

6.2.131 Verify "STALL" LED = on

6.2.132 Verify PA65=H

6.2.133 Verify PA63=L

6.2.134 Set SW84-H

6.2.135 Verify "STALL" LED = off

6.2.136 Verify PA65=L

6.2.137 Verify PA63=H

6.2.138 Using mV source apply 2VDC to PA50

6.2.139 Verify PA62=-4VDC

6.2.140 Reverse polarity of mV source

6.2.141 Verify PA62=4VDC

6.2.142 Verify "IMOK" LED = on

6.2.143 Connect the following points together

    PA16

    PA18

    PA29

    PA44

    PA46

    PA48

    PA50

    PA68

6.2.144 Connect the above points to 15VDC

6.2.145 Verify "IMOK" LED = off

6.2.146 Remove connection from 15VDC

6.2.147 Verify "IMOK" LED = on

6.2.148 Connect the above points to -15VDC

6.2.149 Verify "IMOK" LED = off

6.2.150 Remove connection from -15VDC

6.2.151 Verify "IMOK" LED = on

  6.3   ****TEST COMPLETE ****

7. NOTES

  7.1   None at this time.

8. ATTACHMENTS

8.1 None at this time.