g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-DS3800NOAB**

Test Procedure for a DS3800NOAB

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Steve Pharris	06/01/2004
B	Corrected header & footer and spelling errors	C. Wade	12/2/2010
C	Rewrite of procedure to increase reliability and simplify procedure	Steve Pharris	01/06/2012

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Steve Pharris	C. Wade		Robert Dunlap
DATE	**DATE**	**DATE**	**DATE**
6/01/2001	12/2/2010		6/2/2004

Functional test procedure for a DS3800NOAB

1. SCOPE

1.1 This is a functional testing procedure for a DS3800NOAB.

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 or cracked

4.2.1.2 Terminal strips / connectors broken or cracked

4.2.1.3 Loose wires

4.2.1.4 Components visually damaged

4.2.1.5 Capacitors leaking

4.2.1.6 Solder joints damaged or cold

4.2.1.7 Circuit board burned or de-laminated

4.2.1.8 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	H188505	Fluke 5500A Calibrator
1		O-Scope
1		47.5K ohm resistor
1		100K ohm resistor
1		22.1K ohm resistor
1		Rainbow box
1	H033767	Connector box for DS3800
1	H033772	DS3800 Power Supply

6. TESTING PROCESS

6.1 Testing Procedure

6.1.1 Connect PA4 – PA12

6.1.2 Connect PA10 through 22.1K ohm resistor to PA9

6.1.3 Connect PA6 – PA9

6.1.4 Connect PA3 through 47.5K ohm resistor to PA2

6.1.5 Apply Power

6.1.6 Verify PA12 = -5VDC

6.1.7 Disconnect PA3 from the 47.5K ohm resistor

6.1.8 Connect PA9 to the side of the 47.5K ohm resistor you just removed PA3 from

6.1.9 Remove connection between PA6 – PA9

6.1.10 Connect PA3 – PA6

6.1.11 Verify PA12 = -5VDC

6.1.12 Move PA6 to PA8

6.1.13 Verify PA12 = -5VDC

6.1.14 Move PA8 – PA10

6.1.15 Verify PA12 = 10VDC

6.1.16 Move the following leads to the following points

PA2 – PA14

PA4 – PA16

PA10 – PA22

PA12 – PA24

6.1.17 Verify PA24 = 10VDC

6.1.18 Remove PA3 from PA22

6.1.19 Connect PA3 – PA20

6.1.20 Verify PA24 = -5VDC

6.1.21 Move PA20 – PA18

6.1.22 Verify PA24 = -5VDC

6.1.23 Disconnect PA9 from 47.5K ohm resistor

6.1.24 Move connection at PA18 to the side of the 47.5K ohm resistor you just removed PA9 from

6.1.25 Verify PA24 = -5VDC

6.1.26 Move the following leads to the following points

PA14 – PA26

PA16 – PA28

PA22 – PA34

PA24 – PA36

6.1.27 Verify PA36 = -5VDC

6.1.28 Remove PA3 from 47.5K ohm resistor and connect to PA30

6.1.29 Connect PA9 to the side of the 47.5K ohm resistor you just removed PA3 from

6.1.30 Verify PA36 = -5VDC

6.1.31 Move PA30 – PA32

6.1.32 Verify PA36 = -5VDC

6.1.33 Move PA32 – PA34

6.1.34 Verify PA36 = 10VDC

6.1.35 Move the following leads to the following points

PA26 – PA38

PA28 – PA40

PA34 – PA46

PA36 – PA48

6.1.36 Verify PA48 = 10VDC

6.1.37 Move PA3 (5V) from PA46 – PA44 (PA46 will still have one lead connected)

6.1.38 Verify PA48 = -5VDC

6.1.39 Move PA44 – PA42

6.1.40 Verify PA48 = -5VDC

6.1.41 Disconnect PA9 from 47.5K ohm resistor

6.1.42 Move connection at PA42 to the side of the 47.5K ohm resistor you just removed PA9 from

6.1.43 Verify PA48 = -5VDC

6.1.44 Remove All connections

6.1.45 Connect PA56 thru 47.5K ohm resistor to PA9

6.1.46 Connect scope probe across 47.5K ohm resistor

6.1.47 Set Fluke Calibrator to apply a 5VRMS 100hz sine wave

6.1.48 Connect output from Fluke Calibrator thru 100K ohm resistor to PA50. Common from fluke to PA9

6.1.49 Apply signal

6.1.50 Verify 24Vpk-pk clipped sine wave at 100hz

6.1.51 Increase the frequency in 100hz increments to 500hz and verify amplitude of waveform decreases with every increment (Clipping will disappear and turn in to a full sine wave)

6.1.52 Decrease frequency back to 100hz

6.1.53 Remove signal from 100K ohm resistor

6.1.54 Connect Fluke Calibrator to PA52

6.1.55 **Repeat steps 6.1.50 – 6.1.52**

6.1.56 Move PA52 – PA54

6.1.57 **Repeat steps 6.1.50 – 6.1.52**

6.1.58 Move PA54 – TP9

6.1.59 **Repeat steps 6.1.50 – 6.1.52**

6.1.60 Move TP9 – PA66

6.1.61 Verify scope reads 8Vpk-pk @ 100hz sine wave

6.1.62 **Repeat steps 6.1.50 – 6.1.52 (the amplitude will still decrease but it will start at 8Vpk-pk instead of 24Vpk—pk)**

6.1.63 Remove connection at PA66

6.1.64 Connect Fluke Calibrator thru 100K ohm resistor to PA58

6.1.65 Move PA56 – PA68

6.1.66 **Repeat steps 6.1.50 – 6.1.52**

6.1.67 Remove signal from 100K ohm resistor

6.1.68 Connect Fluke Calibrator to PA60

6.1.69 **Repeat steps 6.1.50 – 6.1.52**

6.1.70 Move PA60 – PA62

6.1.71 **Repeat steps 6.1.50 – 6.1.52**

6.1.72 Move PA62 – PA64

6.1.73 Verify scope reads 8Vpk-pk @ 100hz sine wave

6.1.74 **Repeat steps 6.1.50 – 6.1.52 (the amplitude will still decrease but it will start at 8Vpk-pk instead of 24Vpk—pk)**

6.1.75 Move PA64 – TP11

6.1.76 **Repeat steps 6.1.50 – 6.1.52**

6.1.77 Remove All connections

6.1.78 Verify PA70 = -13VDC

6.1.79 Verify PA78 = -6.5VDC

6.1.80 Connect PA72 – PA7

6.1.81 Verify PA70 = 14VDC

6.1.82 Verify PA80 = **.**6VDC

6.1.83 Verify PA78 = 1.3VDC

6.1.84 Verify PA76 = .6VDC

6.1.85 Remove connection at PA72

6.1.86 Verify PA74 = 6.5VDC

6.1.87 Verify IMOK LED is on

6.1.88 Connect PA56 – PA7

6.1.89 Verify IMOK LED is off

6.1.90 Move PA7 – PA5 **(LED will turn on once PA7 is removed and stay on until lead is connected to PA5)**

6.1.91 Verify IMOK LED is off

6.1.92 Remove connection at PA5

6.1.93 Verify IMOK LED is on

6.1.94 Move PA56 – PA68

6.1.95 Verify IMOK LED is on

6.1.96 Connect PA68 – PA7

6.1.97 Verify IMOK LED is off

6.1.98 Move PA7 – PA5 **(LED will turn on once PA7 is removed and stay on until lead is connected to PA5)**

6.1.99 Verify IMOK LED is off

6.1.100 Remove connection at PA5

6.1.101 Verify IMOK LED is on

6.1.102 Move PA68 – PA12

6.1.103 Verify IMOK LED is on

6.1.104 Connect PA12 – PA7

6.1.105 Verify IMOK LED is off

6.1.106 Move PA7 – PA5 **(LED will turn on once PA7 is removed and stay on until lead is connected to PA5)**

6.1.107 Verify IMOK LED is off

6.1.108 Remove connection at PA5

6.1.109 Verify IMOK LED is on

6.1.110 Move PA12 – PA24

6.1.111 Verify IMOK LED is on

6.1.112 Connect PA24 – PA7

6.1.113 Verify IMOK LED is off

6.1.114 Move PA7 – PA5 **(LED will turn on once PA7 is removed and stay on until lead is connected to PA5)**

6.1.115 Verify IMOK LED is off

6.1.116 Remove connection at PA5

6.1.117 Verify IMOK LED is on

6.1.118 Move PA24 – PA36

6.1.119 Verify IMOK LED is on

6.1.120 Connect PA36 – PA7

6.1.121 Verify IMOK LED is off

6.1.122 Move PA7 – PA5 **(LED will turn on once PA7 is removed and stay on until lead is connected to PA5)**

6.1.123 Verify IMOK LED is off

6.1.124 Remove connection at PA5

6.1.125 Verify IMOK LED is on

6.1.126 Move PA36 – PA48

6.1.127 Verify IMOK LED is on

6.1.128 Connect PA48 – PA7

6.1.129 Verify IMOK LED is off

6.1.130 Move PA7 – PA5 **(LED will turn on once PA7 is removed and stay on until lead is connected to PA5)**

6.1.131 Verify IMOK LED is off

6.1.132 Remove connection at PA5

6.1.133 Verify IMOK LED is on

6.1.134 Move PA48 – PA70

6.1.135 Verify IMOK LED is on

6.1.136 Connect PA70 – PA7

6.1.137 Verify IMOK LED is off

6.1.138 Remove PA70

6.1.139 Verify IMOK LED is on

6.2 ***TEST COMPLETE ***

7. NOTES

7.1 None at this time.

8. Attachments

8.1 None at this time