g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GED-DS3800NSFE**

Test Procedure for an DS3800NSFE 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	12/08/2009
B	Rewrite of procedure to include counter timer	Steve Pharris	1/19/10
C			

PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Steve Pharris			Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
12/8/2009			12/8/2009

1. SCOPE

1.1 This is a functional testing procedure for a **DS3800NSFE**.

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		20K Ohm Resistor
1		Tenma Dual Power Supply
1	H033882	Rainbow Box
1	H033767	Standard Connector Box for DS38000
1	H033772	Power Supply for DS3800 Cards
1	H033769	Fluke Voltage Calibrator
1		O-Scope

6. TESTING PROCESS

6.1 Setup

6.1.1 Replace U2

6.1.2 Make the following connections and set switches as follows

PA1-PA9-PA36-PA42-PA12-PA59-PA1

SW81-PA2-L

SW82-PA53-H

SW83-PA14-L

SW84-PA52-L

SW85-PA11-H

SW86-PA68-L

SW87-PA66-L

SW88-PA74-L

SW89-PA64-L

SW90-PA76-L

SW91-PA61-L

SW92-PA72-L

SW93-PA70-L

SW94-PA60-L

SW95-PA13-H

SW96-PA56-L

6.2 Testing Procedure

6.2.1 See Section 7 “Notes”.

6.2.2 Apply power to card.

6.2.3 Set SW82-L

6.2.4 Set SW93-H

6.2.5 Set SW95-L

6.2.6 Set SW85-L

6.2.7 Set SW95-H

6.2.8 Set SW94-H

6.2.9 Set SW85-H

6.2.10 Toggle SW85-L-H

6.2.11 Verify approx 2VDC at pin13 of U2 (If fails toggle SW85-L-H again)

6.2.12 Set SW86-92-H

6.2.13 Set SW84-H

6.2.14 Set SW95-L

6.2.15 Toggle SW85-L-H

6.2.16 Set SW95-H

6.2.17 Set SW84-L

6.2.18 Toggle SW85-L-H

6.2.19 Verify 133hz square wave at S1-S6 (If fails toggle SW85-L-H again)

6.2.20 Power down UUT

6.2.21 Connect PA23, PA24, and PA25 to fluke voltage calibrator set for 2VDC

6.2.22 Set all switches L except SW82, SW85, and SW95

6.2.23 Apply power to card

6.2.24 Set SW82-L

6.2.25 Set SW92-H

6.2.26 Set SW95-L

6.2.27 Set SW85-L

6.2.28 Set SW95-H

6.2.29 Set SW96-H

6.2.30 Set SW85-H

6.2.31 Toggle SW85-L-H

6.2.32 Verify pin17 of U2 is 316hz

6.2.33 Set SW82-H

6.2.34 Set SW94-H

6.2.35 Toggle SW95-L-H

6.2.36 Toggle SW85-L-H

6.2.37 Set SW94-L

6.2.38 Set SW95-L

6.2.39 Set SW85-L

6.2.40 Disconnect inputs at SW86-SW93

6.2.41 Set SW83-H

6.2.42 Verify 316hz 4.5Vp-p square wave at PA68, PA66, and PA74

6.2.43 Adjust fluke voltage calibrator to 0VDC

6.2.44 Verify no signal at PA68, PA66, and PA74

6.2.45 Readjust fluke voltage calibrator to 2VDC

6.2.46 Verify 316hz 4.5Vp-p square wave at PA68, PA66, and PA74

6.2.47 Set SW84-H

6.2.48 Verify no signal at PA68, PA66, and PA74

6.2.49 Set SW84-L

6.2.50 Verify 316hz 4.5Vp-p square wave at PA68, PA66, and PA74

6.2.51 Using Tenma Power Supply apply –2VDC to JA25

6.2.52 Set SW83-L

6.2.53 Set SW82-L

6.2.54 Set SW83-H

6.2.55 Set SW82-H

6.2.56 Verify PA61 toggles between H-L as voltage on Tenma is varied

6.2.57 Set SW84-H

6.2.58 Verify PA61 no longer toggles

6.2.59 Set SW84-L

6.2.60 Move connection at JA25 to TP13

6.2.61 Apply +VDC to TP13

6.2.62 Set SW83-L

6.2.63 Set SW82-L

6.2.64 Set SW83-H

6.2.65 Set SW82-H

6.2.66 Verify PA76 toggles between H-L as voltage on Tenma is varied

6.2.67 Set SW83-L

6.2.68 Set SW84-H

6.2.69 Power down UUT

6.2.70 Connect 20K ohm resistor across JB1-JB2

6.2.71 Apply power to UUT

6.2.72 Using Fluke Voltage Calibrator apply 12VDC to PA23, PA24, and PA25

6.2.73 Using Tenma Power Supply apply –17VDC to PA15

6.2.74 Verify IMOK LED turns on and off as voltage from Fluke is adjusted between 12VDC and 14VDC

6.2.75 Verify IMOK LED turns on and off as voltage from Tenma is adjusted between -17VDC and -19VDC

6.2.76 Connect DMM to PA22

6.2.77 Verify voltage varies when Tenma power supply is adjusted

6.3 ***TEST COMPLETE ***

7. NOTES

7.1 If the switch settings are not followed exactly the 8254 will not enter the proper mode and the test will not work. You will have to go back to the last "apply power" step you passed and start over there.

8. ATTACHMENTS

8.1 None at this time